With Medical Officer of Health's Compliments.

County Borough  of Blackburn.

ANNUAL REPORT

UPON THE

Health of Blackburn.

FOR THE YEAR

1893,

BY

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Medical Officer of Health and Police Surgeon.

BLACKBURN:

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INDEX.

It shows clearly how very much the percentage of Women with no employment varies in different towns, and how in the Lancashire manufacturing towns it is lower than elsewhere. The significance of this is clear when one compares the percentage of unemployed women with the Infantile Death-rates of the respective towns.

The connection between the high Infantile Mortality and the employment of married women has been repeatedly pointed out. If it is impossible to prevent married women, with young children, from working away from home, it ought to be possible to see that the children are skillfully nursed and attended to when the mothers are away. In this connection, I am glad to be able to say that a crêche has been opened in Blackburn by Mr. Eli Heyworth. It has now been working since December, 1893, and is much appreciated by the workpeople. It confers a great benefit upon both parents and children. I am sure it needs only to become more widely known for the example to be followed by other employers.

By referring to Table XIII it will be seen that a large number of the causes of death amongst young children are preventable. Many of them are intimately associated with the feeding of the children; perhaps none more so than Summer Diarrhœa. I have been contemplating drawing up directions for feeding of infants, and asking the Registrars to kindly distribute them when births are registered.

TABLE XVI.

	Trade of Fathers.	1893.			1892.			1891.		
		Births.	Deaths Under One Year.	Infantile Mortality per 1000 Births.	Births.	Deaths Under One Year.	Infantile Mortality per 1000 Births.	Births.	Deaths Under One Year.	Infantile Mortality per 1000 Births.
1st	Cotton Operatives and Labourers.	1615	528	326	1739	460	264	2031	518	254
2nd...	All Others ...	2207	394	178	2144	316	147	2054	330	160

The difference which I found in the infantile mortality amongst cotton operatives and labourers and amongst all others in 1892 is even more marked in 1893. This shows clearly how many of these deaths might be prevented by care and knowledge.

TABLE XVII.

Deaths under one year of age for the four quarters.

Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.
1893	184	182	339	217	922
1892	207	169	225	175	776
1891	179	244	213	192	828
1890	191	147	193	251	782

The increase during the 3rd quarter was much greater than usual, and corresponded with the severe epidemic of diarrhœa.

UNCERTIFIED DEATHS.

The death-rate from uncertified deaths in Blackburn was ·7. By comparing it with other towns on table IX. it will be seen that there are only five towns in which this rate was higher. It is very desirable that the number of uncertified deaths should be low There can be no doubt that there is often culpable negligence on the part of the parents which cannot be found out without special inquiries being made.

The report of the committee formed to consider this question recommended the appointment of medical inspectors to visit all uncertified deaths and report to the coroner. Probably this would be the best way of dealing satisfactorily with these cases.

There were 80 Inquests held during the year, with the following verdicts :—

Accidental Death...	45
Natural Causes	26
Suicide	6
Wilful Murder	1
Excessive Drinking	2
	80

CAUSES OF DEATH.

Detailed particulars of the causes of death and the ages at which death took place will be found at the end of the report, Appendix I :—

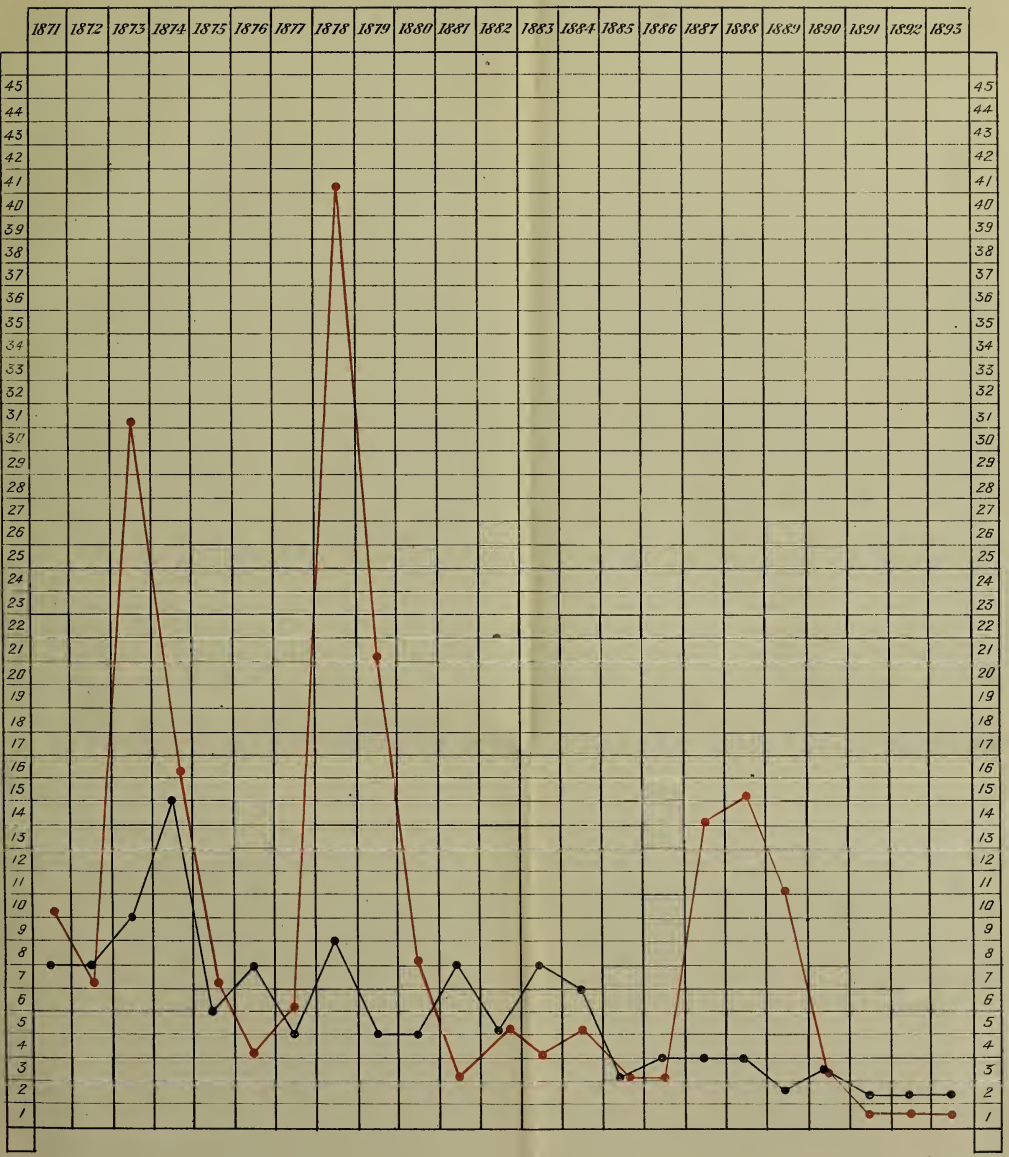
TABLE XVIII.

Death-rates from the principal groups of diseases for 1891, 1892, and 1893.

Diseases.	1891.		1892.		1893.	
	Total Deaths.	Death-rate	Total Deaths.	Death-rate.	Total Deaths.	Death-rate.
1. Zymotic (including Diarrhœa.....	527	4·3	349	2.8	592	4·7
2. Parasitic	1	·008			1	·008
3. Dietetic	47	·39	62	·50	30	·24
4. Constitutional	346	2·8	322	2·6	375	3·0
5. Local	1736	14·4	1369	11·1	1414	11·4
6. Developmental ...	339	2·8	342	2·6	217	1·7
7. Violent deaths.....	80	·66	67	·54	49	·39
8. Not specified or ill-defined.....	40	·33	40	·32	115	·92
	3116	25·85	2551	20·8	2793	22·5

CHART I.

DEATHS PER 10,000



SCARLET FEVER *marked thus* ———

TYPHOID FEVER RATE *marked thus* ———

ZYMOTIC DISEASES.

There were 501 deaths from the seven Zymotic Diseases giving a death-rate of 4·0 compared with 2·1 in 1892.

TABLE XIX.

	33 Large Towns.	Blackburn.
Seven Zymotic Diseases.....	3·1	4·0
Measles	0·4	1·1
Scarlet Fever	0·2	·003
Whooping Cough	0·4	0·2
Typhoid Fever	0·2	0·2
Diarrhœa	1·2	2·3
Diphtheria	0·4	·001
Smallpox	·007	·006

MEASLES.

There were 140 deaths from measles compared with 8 in 1892. Nearly the whole of these deaths occurred in the months of July, August, and September. This epidemic reached its height in July. Its rise was somewhat sudden, as no deaths had occurred from measles up to the middle of May, and by the middle of June the epidemic had assumed serious proportions. Our attention was called to it first by the School Board Authorities. St. Mary's Infant School was the first affected, and on visiting it on May 17th, 60 children were found to be absent from measles. The number of fresh absentees was, however, rapidly diminishing. Instructions were given to the teachers, and the Whitsuntide holidiays were extended in order to allow of proper disinfection of the school. The schools were disinfected on May 26th. On re-opening the attendance improved quickly, and fresh cases were very rare.

In another part of the town St. Thomas's infant school was affected in a very similar way.

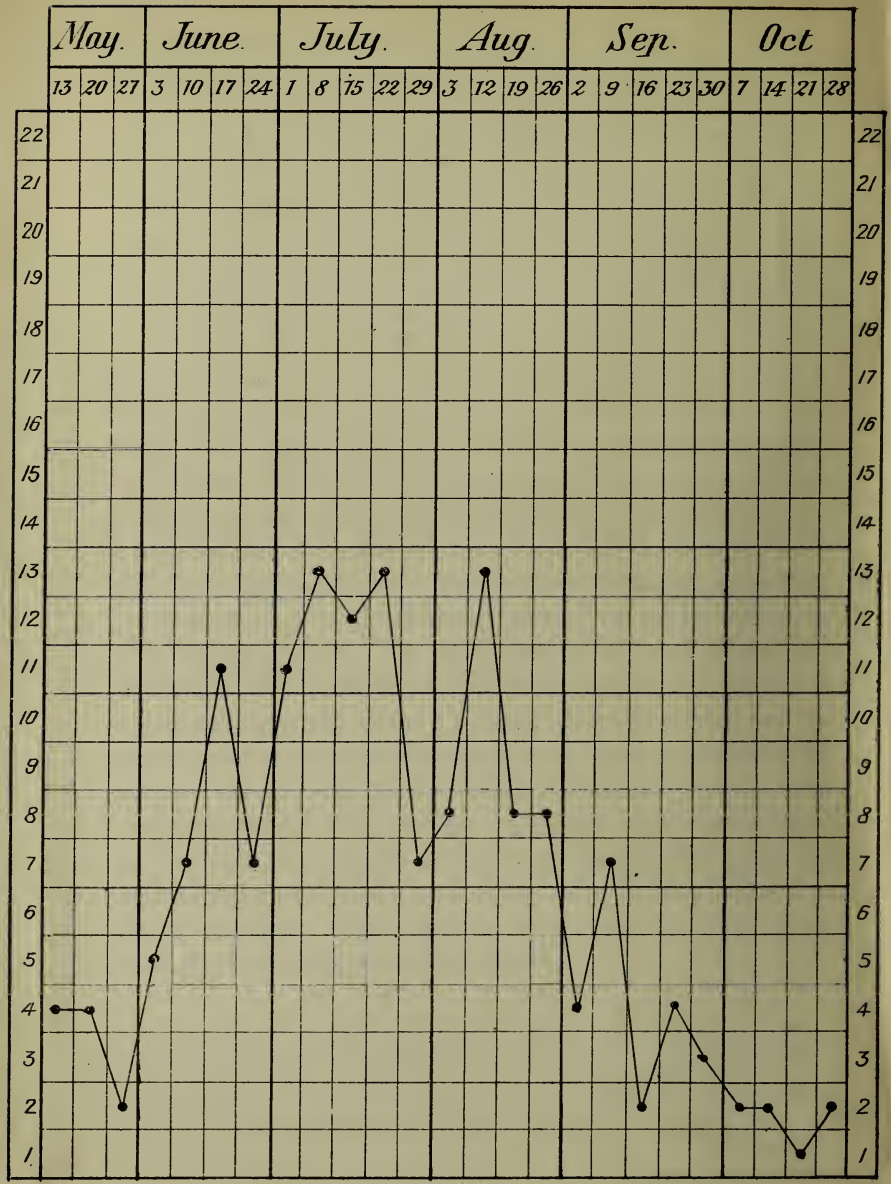
It is interesting to note that at this stage the epidemic was almost confined to these two schools. It is often said that infectious diseases are more likely to be spread by children playing about the streets together and visiting each others houses. No doubt the good that can be attained by school closing in a town is not so marked as in the country. Still, in an epidemic of this kind it can often be shown, especially at the commencement, that the schools are the means of conveying the disease. In this particular epidemic there were two schools affected much earlier than the rest. They drew their scholars from a fairly-wide district, and the scholars may be said to have had nothing in common except attending the same school. There were schools close to that were at the time quite free from measles. There can be no doubt, too, that a school-room is just the place to favour the spread of a disease of this kind. The children are close together and are only allowed a small cubic space each. They must breathe the expired air of other children. There is also before any epidemic, especially in the infant schools, a large nnmber of children who have not had the disease. It is this close aggregation of a large number of highly susceptible children that makes the spread of measles and other diseases so rapid through schools In many cases the evil effect is produced before the school is closed, as the incubation period of measles is a long one, generally about 14 days. A school cannot well be closed unless it can be shown that it is an agent in spreading the disease. At the time of the closure perhaps only a dozen cases have occurred, but very possibly many times that number have become infected. In fact, all the cases that develop during the next fortnight after closure have really been infected before the school was closed. This, perhaps, more than any other cause, renders school-closing somewhat abortive.

I reported to you concerning this epidemic at a special meeting of the Health Committee on June 5th, 1893. I recommended that the following infant schools should be closed for a period of one month :—St. Thomas, St. Lukes, Novas Scotia, St.

CHART 2.

EPIDEMIC OF MEASLES.

1893.



Peters', Park Road, Whalley Range, Christ Church, Trinity, St. Albans, and Furthergate. These schools were accordingly closed Afterwards Audley Range School was closed on June 14th, St. Barnabas June 15th, Wensley Fold June 17th, St. Michael's June 23rd, Emmanuel June 26th, St. Matthew's June 27th, St. John's June 29th, St. Paul's July 5th, and Bank Top July 14th.

Afterwards all the schools were closed for the summer holidays from July 21st to August 14th.

Chart II. shows the course of the disease as indicated by the deaths. The climax of the disease may be taken to be about three weeks earlier than the period of highest death-rate.

The effect of these closures is not very evident. There is abundant reason for thinking that the disease is spread largely through the schools, but no measures that have hitherto been taken seem to have any appreciable effect in diminishing the number of cases of measles. The limiting factor in the epidemics is probably the susceptible material. In other words the epidemics seem to run their course until all the children or nearly all the children who have not previously had the disease are attacked. This seems borne out by the fact that the cases of measles were almost entirely confined to the infant schools. There can be no doubt that the children of the other divisions of the schools were constantly exposed to infection, and the only reason why the disease did not get any considerable footing amongst them was that most of the children were already protected.

In Blackburn during the last 23 years there have been 1,910 deaths from measles. During the same time there have been 86,295 births. The number of deaths under one may be taken as about equal to the number of children dying unattacked by measles. The case mortality of measles is generally about $2\frac{1}{2}$ or 3* per cent. It if be taken as 3 per cent., then over 90 per cent. of the children of the town are attacked by this disease.

*The percentage mortality may possibly be underestimated.

Deaths from measles at age periods :—

0—1	1—5	5—10
35	94	11

This distribution shows that the disease was principally among children under 5.

At present all our information with regard to these cases is gathered from the School Board Authority, or from the schools. I have advocated in previous reports the notification of this disease by householders. It is likely that this would result more in diminishing the mortality from the disease than in lessening the incidence.

Scarlet Fever.—There were 4 deaths from Scarlet Fever compared with 13 in 1892. There were, however, 190 cases notified compared with 176 in 1892.

The cases have been taken as a whole of a very mild nature. The comparative freedom from Scarlet Fever has now lasted for four years, and judging from the fact that the epidemic of 1888 and 1889 was not of a very severe character, it is unlikely that another twelve months will pass over without a very considerable increase.

No cases have during the year been traced to the milk supply.

Age Period.	0—1	1—5	5—10	10—15	15 upwards.
Notified Cases	8	68	73	25	16
Deaths	1	2	1	—	—

The Infectious Diseases Hospital which will be opened in July will enable us to see that isolation is carried out in a very different way from what has been usual in the past. The trouble and inconvenience that householders will be saved by removal of the patient to the hospital will be very great. The time during which the other children in the same house have to be kept away from school will be reduced from six weeks to a week or ten days.

BLACKBURN.

Registration Sub-Districts.

MAP SHEWING

Cases of Scarlet Fever notified during 1893 thus ○

" " Typhoid Fever " " " " ●

NORTHERN BLACKBURN

WITTON AND LIVESEY

SOUTHERN BLACKBURN

LOWER DARWEN

LITTLE HARWOOD

WHITEBIRK

WHALLEY NEW ROAD

WHALLEY OLD ROAD

ST JAMES ROAD

REVIDGE ROAD

CORPORATION PARK

BILLING END ROAD

OOZE HEAD LANE

WENSLEY FOLD

WENSLEY STREET

PRESTON NEW ROAD

PRESTON OLD ROAD

REDLAM

WHALLEY LANE

LAMMACK

FOUR LANE ENDS

PLECK GATE

CEMETERY

CURLING PONDS

To Leeds

HOLE HOUSE ROAD

BURNLEY ROAD

CURLING POND

L&Y RAILWAY STATION

L&N.W. RY GOODS YARD

ABATTOIRS

QUEENS RD

QUEENS PARK

HASLINGDEN ROAD

OLD BANK LANE

WORKHOUSE

AUDLEY RESERVOIR

SHADSWORTH ROAD

SITE OF SANATORIUM

LONGSHAW LANE

From Liverpool

Leeds & Liverpool Canal

BOWER HOUSE FOLD

KING'S RD

WATERLOO

LIVESEY BRANCH R.D

River Darwen

BOLTON ROAD

BRANCH ROAD

HIGH ST

STOOPS BROW

Blackamoor

ROMAN ROAD

FISH MOOR RESERVOIR

GUIDE RESERVOIR

GUIDE

SPEW SPOUT LANE

BLACKAMOOR ROAD

HASLINGDEN RD

BRITHORN RD

H. Whitehead, Litn. Blackburn

WHOOPING COUGH.

There were thirty deaths from whooping cough, compared with 96 in 1892.

TYPHOID FEVER.

There were 161 cases of Typhoid Fever notified, and 9 others developed in the same houses within a period of one month, making a total of 170, In 1892 there were only 79 cases notified. The deaths, however, were 27, compared with 32 in 1892. The average duration of the cases before notification was 8 days. In many cases it was more, and in many less. This delay is no doubt due to the difficulty of diagnosis of Typhoid Fever in its early stages. Fortunately, there is great probability that this disease is not infectious in its early stages, but still early notification is extremely important if isolation and disinfection are to be properly carried out. Amongst the houses where Typhoid Fever occurred there were 5 with slop-pipes directly connected to the sewer. These slop-pipes acted as sewer ventilators, and were quite sufficient to account for any Typhoid Fever that might arise. The smoke test was applied to all the houses where cases were notified. In 67 of these smoke escaped into the house when the test was applied to the drain. In 38 smoke escaped from the drain into the yard, but did not gain access to the house. In 56 the smoke test did not show any defects. The test was applied at the yard gullies, and was not in any sense a severe one, as the smoke had an open course to the sewer. It is very probable that defects would have been found in some of the 56 if the drain had been broken down to, and the test put on at the open end. If the houses where Typhoid Fever occurred be analysed according to their sanitary accommodation, it will be found that

46 are houses with middens.
40 „ water closets.
75 „ tubs.

This gives a considerably higher percentage of attack rate in midden houses.

Twelve cases were traced directly to previous ones. This is not a large number, but when the difficulty of tracing these is borne in mind, it will be seen that it is of more significance than at first appears. Of the dangers of direct transmission of Typhoid Fever to persons in the same house, there can be no doubt that the greatest arises from keeping food and eating it in the room where the patient is. The districts with the greatest incidence of Typhoid Fever were around Mill Hill and in the neighbourhood of Grimshaw Park. No common cause was found for these small epidemics. There was no reason to suspect that either milk or water was the cause. Some of the earlier cases did not come under the notice of the Health Department until late, and thus the virus had an opportunity of being disseminated.

DIPHTHERIA.

There have been 2 deaths from Diphtheria, compared with 3 last year, and 3 cases have been notified. No special insanitary conditions have been found to cause these.

SMALLPOX.

Smallpox is a disease which does not occur in a town after a considerable time of absence without re-importation. In Blackburn there was no case from November 19th, 1892, to January 15th, 1893. A vagrant then came from Bolton, and his illness commenced nine days after his arrival in Blackburn. Of the first 14 cases 9 were imported and belonged to the vagrant class, and 5 were infected in the workhouse. Up to this time the disease had not touched the working-class population of the town. The vagrants being the moving population between town and town, it must necessarily be through them that Smallpox is mostly communicated. But this does not mean that Smallpox flourishes amongst them more than amongst the stationary population. I

was often much struck in my attempts to persuade the inmates of the common lodging-houses to be revaccinated by the large number of them who had been revaccinated previously. Many of them had been revaccinated in the army and navy, others in public institutions. It is to this large amount of re-vaccination that I attribute the fact that Smallpox did not spread in the lodging-houses to a greater extent. Later on, when the disease affected the stationary population of the town there was a greater tendency to spread even though the precautions that could be adopted were much more perfect and the crowding together not nearly so marked.

It was expected and proved correct that the imported cases of Smallpox would generally be found in the Common Lodging Houses. The following letter was, therefore, sent to all Common Loding House keepers :--

"I am instructed by the Health Committee to call your attention to Section 84 of the Public Health Act, 1875, which says: 'The keeper of a Common Lodging House shall when a person in such house is ill of fever or any infectious disease give immediate notice thereof to the Medical Officer of Health.'

"In order to free yourself entirely from any blame, it will be necessary for you to report immediately to the Medical Officer of Health or the Inspectors who visit, any case of sickness or skin eruption occurring in your lodging house, even though it is not sufficient to keep the person in bed.

"Yours faithfully,

"JAMES WHEATLEY,

"Medical Officer of Health."

I instituted as well a nightly visitation of all the Common Lodging Houses by the Inspectors. By this means all suspicious cases of illness were reported to me early. Particular attention was paid to any tramps who had arrived from a town where Smallpox was prevalent. These visits were a very considerable help, and by their means many cases were discovered earlier than they otherwise would have been.

One man suffering from Smallpox was in a lodging-house for 14 days before he was discovered. Six cases were traced to him, and it is very probable that he was responsible for more. There was distinct negligence on the part of the lodging-house keeper, so the Committee decided to prosecute. He was fined £1 and costs.

Necessity of early removal of patients is shown in the following table. It states how long the cases of Smallpox had existed before removal to the hospital, and the number of persons infected from these cases.

Date of Removal. (The day of appearance of the rash is called first day.)	Number of Cases.	Persons infected from these cases.
1st	25	—
2nd	24	—
3rd	10	3
4th	10	8
5th	6	8
6th	2	2
14th	1	6
21st	1	11

This table shows clearly, what one would expect, that the danger of infection increases very greatly the longer isolation is delayed. It also appears to point to the fact that the danger of infection during the first day or two is not very great. The three cases that were supposed to be infected from one removed on the third day are not quite conclusive. They occurred in Larkhill common lodging-house where there had been several previous cases, and the infection might have been lingering about the house itself. The history of the epidemic in this house is very instructive as it demonstrates most clearly the advantages of early removal.

On January 23rd an imported case was removed on the second day of the rash. No case followed. On March 9th a man was removed with a rash four or five days old. On the 23rd, 24th, and 25th seven more cases were taken away that could be traced clearly to this man. The inmates of the lodging-house refused to be re-vaccinated. Quarantine was out of the question on account of the large number of lodgers, about 150. Under these circumstances we had to rely upon the early removal of cases and isolation of any suspicious case of illness. To this end an Inspector was told off to keep the lodgers constantly under his observation, so as to report the slightest illness or skin eruption. The result was eminently satisfactory. Four more cases ocurred, one on each of the following days: March 30th, April 4th, 7th, and 11th. Two of these were isolated before the appearance of the rash, and the other two immediately the rash broke out. No further cases occurred, and what threatened to be a troublesome local epidemic was stamped out.

Early removal of the cases depends upon:—

(1) Early notification by medical men.

(2) Early discovery by officials of the Health Department.

There are a considerable number of cases of Smallpox which are unattended by medical men. A fact no doubt due to the modifying effect of vaccination, which converts in many cases a very fatal disease into a very mild one. It is, therefore, all the more necessary that additional means should be taken for discovering cases as early as possible. Besides the nightly visitation of the lodging-houses, the most efficient means have been the visitation of all those who have been the least degree in contact with a Smallpox case.

Vaccination.—By referring to Table V., it will be seen that during the year 1893 there were 471 children not vaccinated. This is not altogether satisfactory, nevertheless, as regards primary

vaccination, Blackburn may be considered still to be in a fair positon. Although there are no data to work on, there is reason to think that the same cannot be said with regard to re-vaccination.

At the beginning of the year, after the occurrence of smallpox in a full lodging-house, I wrote to the Clerk of the Board of Guardians, setting out the seriousness of the situation and advising fresh facilities for re-vaccination. The Guardians not only issued bills, but employed men to visit those districts where smallpox cases had arisen, with the object of trying to persuade the inhabitants to be re-vaccinated. The results of the placards and visits it is difficult to accurately ascertain.

The poor-law Medical Officers return 153 as re-vaccinated. There must, however, have been a considerable number re-vaccinated by other medical men. I vaccinated myself roughly about 360 persons, principally those who had been in contact with smallpox.

The influence of vaccination in this epidemic may be considered from four points.

1. The protection against the disease that infantile vaccination gives.

2. The protection that vaccination after exposure will give.

3. The influence that vaccination has upon the fatality of the disease in those attacked.

4. The influence of vaccination in causing undiscovered cases.

1.—*The protection against the disease that infantile vaccination gives*—Unfortunately there are no statistics of the number of vaccinated and unvaccinated persons in the borough. It is therefore impossible to work out accurately attack-rates. Several

clear deductions can, however, be drawn from the comparison of the age-attack in this epidemic with that of epidemics in pre-vaccination times.

	Under 1	1—5	5—10	10—20	20—40	40—60	60 up.
Blackburn, 1893.							
Cases	1	1	2	7	49	16	3
		5 %			95 %		
Deaths	1				5	1	1
England, 1839.							
Deaths.....	2235	4218	1122	432	556	88	63
		88 %			12 %		

In our experience of last year only 5 per cent. of the cases were under 10 years of age, and only one death, that being an unvaccinated child. In the epidemic of 1839, 88 per cent. of the deaths were under 10 years of age.

Smallpox was principally a disease of childhood. It is now rare in childhood and most common between 25 and 50. The reason for this alteration is no doubt vaccination. The effect of vaccination diminishes in time, and the period at which persons again become susceptible depends upon the efficiency with which it has been done, and probably other less understood constitutional causes. These figures seem to point to 15 as being about the age for re-vaccination.

The value of vaccination is illustrated by the following facts. In the early part of the epidemic four cases of Smallpox were removed from the Workhouse. These were imported cases, but from them five fresh ones sprung. The seriousness of the situation was at once met by vaccinating all the inmates. Afterwards, although five more cases were imported, no fresh ones developed.

All the officials of the Health Department who had not been re-vaccinated were re-vaccinated at the beginning of the epidemic. Although they frequently came in contact with Smallpox patients, none of them caught the disease.

It was necessary to send over some workmen to the hospital to repair a breakdown in the hot water pipes. No one could be found who would be re-vaccinated. Finally two men were allowed to go without being thus protected. The danger was explained to them and every other precaution was taken. The only ward they entered had had no patients in it. They both, however, caught Smallpox, and one of them had it very severely.

2.—*The protection given by re-vaccination after exposure.*—Here there are more definite data to work upon. It is not possible to draw conclusions from all the persons who have been exposed to infection, for some of these could not be kept under observation. There were, however, 243 persons detained in quarantine ; of these we have full particulars.

Of the 243 persons
211 were re-vaccinated,
15 were considered sufficiently protected by re-vaccination or a previous attack,
17* were not re-vaccinated.

* Amongst these are included those who were re-vaccinated after the commencement of the illness. These obviously could not be affected by re-vaccination.

Of the 211 persons who were re-vaccinated 2 caught the disease.

Of the 17 persons who were not re-vaccinated 5 caught the disease.

Of the two re-vaccinated persons who caught Smallpox one had been exposed four days and the other five days before re-vaccination was performed.

These figures clearly demonstrate the value of vaccination even after exposure, and they seem to show that if it is done within three days the danger of infection is very slight The value of vaccination after exposure to infection is well illustrated in the two following cases.

Case No. 55 occurred in a house where there were four other persons. Three of these were re-vaccinated and escaped. The fourth refused and was attacked.

Case No. 42 occurred in a house where there were three other persons. They were re-vaccinated and escaped. The only other person who had been in contact was a brother who lived in another part of the town. He was only in this house a few minutes. He was not re-vaccinated and was attacked with Small-pox 12 days afterwards.

3.—*Influence of re-vaccination on the fatality of the disease in those attacked.*

The following table gives the number of cases and the number of deaths arranged according to the vaccination marks found on the patients.

	No mark.	1 mark.	2 marks.	3 marks.	4 marks.	5 marks.
Cases ...	8	13	25	26	6	1
Deaths ...	6	1	1	0	0	0

It is somewhat singular that there should be no deaths amongst those who had three or four distinct marks. This is by no means always the rule.

Taking the six deaths in the first column separately. One was definitely known not to have been vaccinated, two thought they had not been vaccinated, and three thought they had been vaccinated. Marks in every case were sought for carefully.

4.—*Influence of vaccination in causing overlooked cases.*

This has been already alluded to previously when mentioning the fact that by no means all cases were attended by medical men. Vaccination not only renders this class of case more numerous, but it also makes the disease more difficult of recognition.

The following is an analysis of the 79 cases, showing their origin as far as possible.

Imported	18
Traced to overlooked cases	29
Traced to other cases	11
Untraced	21

The number traced to overlooked cases formed a very considerable proportion of the total. It is also extremely probable that many of the untraced ones were due to some cases which never came to light. The fact that vaccination renders smallpox often more difficult of recognition has made some medical men advocate the substitution of vaccination about puberty, and compulsory vaccination after exposure. When, however, it is considered what a large amount of susceptible material, consisting of children under 15, there would be, and what a great influence the schools would have in the spread of the disease, it will readily be seen that any such alteration would be extremely dangerous.

The number of imported cases has in this epidemic been very large. It is no doubt due to the fact that the disease has been extremely widespread, no town of importance for many miles around having escaped.

Quarantine.—Two hundred and forty-three persons have been kept in quarantine for a period of 14 days. This is an expensive method of procedure, and I think it is clearly proved by the foregoing figures that it is very rarely necessary. Where the case is removed within two days of the appearance of the rash, and the rest of the household are vaccinated, there is absolutely

no necessity for quarantine—at least, that is the inference that one would naturally draw from last year's experience. In the last few cases I have acted on this supposition, and so far with good results. Quarantine might still be useful in those cases that have been overlooked for three or four days, and in which the rest of the household refuse the protection of vaccination.

To sum up briefly, the measures that are necessary for preventing the spread of smallpox.

1.—Measures for obtaining early information of the cases.

(*a.*) Notification by medical attendant.

(*b.*) Visiting of lodging houses

(*c.*) Visiting of those persons who have been in contact with a case of small pox.

2.—Immediate removal to a hospital situated outside a town.

3.—Disinfection of houses and clothes.

4.—Re-vaccination of those who have been in contact.

5.—Isolation of suspicious cases.

6.—Quarantine (only occasionally necessary).

These are the means by which the epidemic was kept in check.

Several cases occurred just outside the borough. These were removed at the request of the Rural Sanitary Authority to Finnington Hospital. special arrangements being made. The importance of these cases, however, is that they only come to light through the consideration of the medical men attending. There is no notification of infectious diseases in the rural district, and an epidemic might easily have sprung from an unnotified case. Unfortunately an epidemic occurring in this way would be very likely to spread into the town. This is only another instance of the unsatisfactory character of Acts which may be adopted or otherwise as local authorities think fit.

SMALLPOX CASES.

Number	Age	Date of Rash	Date of removal to Hospital	Type of Disease	Result	Date of Discharge	Days in Hospital	Vaccination Marks	QUARANTINE			REMARKS
									Re-vaccinated	Protected by Smallpox or recent Re-vaccination	Not Re-vaccinated	
1	21	Jan 18	Jan 19	Discrete	Recovered	Well in 3 weeks	...	4 good marks	2	.....	.....	Imported from Bolton ; came from a lodging house where there had been several cases.
2	38	Jan 22	Jan 23	Confluent	Died	Jan 31	8	2 good marks	.....	.....	.....	From Halifax ; removed from Workhouse.
3	40	Jan 22	Jan 23	Confluent	Recovered	Feb 22	30	2 fair marks	.....	.....	.....	From Manchester ; removed from Workhouse.
4	32	Jan 19	Jan 23	Discrete	Recovered	Feb 13	21	3 marks	.....	.....	.....	From same lodging house in Bolton as No. 1 ; removed from Workhouse

5	35	Feb 2	Feb 3	Confluent	Died	Feb 7	4	No marks to be seen ; said to have been vaccinated	.....	.....	.. ...	From Preston ; removed from Workhouse
6	21	Feb 4	Feb 4	Discrete	Recovered	Mar 1	25	4 good marks	.....	.....	.....	Infected at Workhouse ; probably No. 4.
7	50	Feb 4	Feb 5	Discrete	Recovered	Mar 1	24	2 marks	.....	.....	.....	Infected by No 4, at the Workhouse.
8	19	Feb 7	Feb 8	Discrete	Recovered	Mar 6	26	3 fair marks	.....	.....	.....	Infected at Workhouse, probably whilst washing infected clothes belonging to No. 4
9	40	Feb 8	Feb 8	Discrete	Recovered	Mar 1	21	1 mark ; 2 revaccinated	.....	.....	.....	Do.
10	23	Feb 12	Feb 12	Discrete	Recovered	Mar 10	28	3 distinct marks	16	1	.....	Imported from Stockport.
11	62	Feb 12	Feb 13	Discrete	Recovered	Mar 6	21	3 indistinct marks	.....	.....	.....	Infected at Workhouse
12	35	Feb 15	Feb 15	Discrete	Recovered	Mar 7	20	2 marks	.....	.....	.....	Imported from Pontefract, removed from Workhouse

Smallpox Cases Continued.

Number	Age	Date of Rash	Date of removal to Hospital	Type of Disease	Result	Date of Discharge	Days in Hospital	Vaccination Marks	QUARANTINE			REMARKS
									Re-vaccinated	Protected by Smallpox or recent Re-vaccination	Not Re-vaccinated	
13	45	Feb 18	Feb 19	Confluent	Recovered	April 6	47	2 marks	.....	.....	.....	Imported from Birkenhead, removed from Workhouse
14	44	,, 11	,, 14	Discrete	,,	Mar 4	19	3 distinct marks	5	1	.....	Imported from Bolton
15	30	,, 26	,, 26	Confluent	,,	,, 27	30	3 marks	1	.....	.....	Infected whilst working at Finnington
16	55	,, 24	,, 27 (Cottage)	Discrete	,,	,, 9	...	3 marks	6	.....	.....	Do.
17	36	,, 15	Mar 9 to (Audley)	Discrete	,,	,, 23	14	4 marks	6	.....	.....	Infection not traced. Not discovered until 3 weeks after commencement
18	29	Mar 4	Mar 8	Confluent	Died	,, 12	4	no marks to be found	.....	.....	.....	Infected from No. 17

19	32	Mar 8	Mar 9	Discrete	Recovered	April 3	26	3 indistinct marks	1	.....	.....	Do.
20	62	,, 6	,, 9	Confluent	Died	Mar 15	7	said to have been vaccinated and re-vaccinated, no marks to be found	.....	.....	.....	Imported from Preston. Was not discovered until 5 days after beginning of illness. Was removed from Larkhill lodging house, where only 4 could be persuaded to be vaccinated
21	30	Mar 6	Mar 10	Discrete	Recovered	Mar 22	13	3 good marks	2	.....	.....	Infected by No. 17
22	34	,, 10	,, 10	Discrete	,,	,, 29	20	3 fair marks	.....	.....	.....	Infected by No. 17. Was removed from Quarantine in Audley Hospital where she had been vaccinated the day before appearance of rash
23	6	,, 10	,, 10	Discrete	,,	,, 22	13	1 mark	.....	.....	.....	Infected by No 17. Was removed from Quarantine in Audley Hospital where he had been vaccinated the day before appearance of rash

Smallpox Cases Continued.

Number	Age	Date of Rash	Date of removal to Hospital	Type of Disease	Result	Date of Discharge	Days in Hospital	Vaccination Marks	QUARANTINE			REMARKS
									Re-vaccinated	Protected by Smallpox or recent Re-vaccination	Not Re-vaccinated	
24	26	Mar 13	Mar 13	Confluent	Recovered	Apl 28	47	3 fair marks	9	.....	.....	Infected by No. 17
25	23	,, 13	,, 14	Discrete	,,	,, 4	22	3 good marks	6	.....	.....	Do.
26	23	,, 14	,, 14	Discrete	,,	,, 4	22	2 good marks	7	.....	.....	Do
27	41	,, 13	,, 14	Confluent	,,	,, 10	28	1 good mark	7	1	.....	Do.
28	21	,, 17	,, 17	Discrete	,,	,, 4	19	2 good marks	5	1	.....	Do.
29	34	,, 17	,, 17	Discrete	,,	,, 15	30	1 mark	1	.....	.....	Not traced
30	38	,, 17	,, 18	Confluent	,,	,, 24	38	1 poor mark	2	.....	.....	Infected by No. 17
31	22	Mar 18	Mar 18	Discrete	Recovered	Apl 20	34	2 good marks	9	1	.....	Infected from Preston; husband removed to Preston Hospital 12 days previous'y

Smallpox Cases Continued.

32	39	Mar 17	Mar 19	Discrete	Recovered	Apl 4	17	2 good marks	5	.....	.....	Infected at Burnley
33	5	,, 17	,, 19	Discrete	,,	,, 6	19	2 fair marks	3	.....	.....	Not traced
34	42	,, 21	,, 22	Confluent	,,	May 10	50	2 poor marks	2	.....	.....	Infected by No. 21
35	52	,, 24	,, 24	Discrete	,,	Apl 26	34	3 marks	.....	.....	.....	Infected by No. 20 ; removed from Work-house
36	22	,, 24	,, 24	Discrete	,,	May 8	46	3 marks	.....	.....	.....	Do.
37	49	,, 24	,, 24	Discrete	,,	,, 3	43	1 good mark	.....	.....	.....	Infected by No. 20 ; removed from Lark-hill Lodging-house
38	31	,, 24	,, 24	Discrete	,,	,, 19	57	2 large marks	.....	.. ...	.....	Do.
39	60	,, 23	,, 24	Confluent	,,	,, 16	54	2 small marks	.....	.....	.....	Do.
40	33	,, 25	,, 25	Confluent	,,	,, 9	46	2 small marks	.....	...	.....	Do
41	36	,, 23	,, 25	Confluent	,,	,, 16	53	2 fair marks	.....	.....	.....	Infected by No. 20 ; removed from Lark-hill Lodging-house
42	32	,, 24	,, 27	Discrete	,,	Apl 24	29	2 indistinct marks	4	.....	.....	Not traced

Smallpox Cases Continued.

Number	Age	Date of Rash	Date of removal to Hospital	Type of Disease	Result	Date of Discharge	Days in Hospital	Vaccination Marks	QUARANTINE			REMARKS
									Re-vaccinated	Protected by Smallpox or recent Re-vaccination	Not Re-vaccinated	
43	43	Mar 30	Mar 30	Discrete	Recovered	May 9	41	1 good mark	.....	.....	.....	Imported from Bradford ; removed from Larkhill Lodging-house
44	33	Apl 4	Apl 4	Discrete	,,	Apl 28	24	1 fair mark	1	.....	2	Infected at Larkhill Lodging-house ; not traced with certainty
45	35	,, 5	,, 5	Discrete	,,	,, 26	21	1 large mark	.....	.....	.....	Imported from Oswaldtwistle ; removed from Workhouse
46	29	,, 7	,, 7	Discrete	,,	,, 28	21	2 large marks	.....	.....	.....	Infected at Larkhill Lodging-house ; not traced with certainty

47	19	,, 5	,, 7	Discrete	,,	,, 28	21	3 good marks	3	.....	.....	Not traced
48	39	,, 8	,, 10	Confluent	,,	June 5	57	2 fair marks	8	1	.....	Infected by No. 42
49	35	,, 11	,, 11	Discrete	,,	May 4	24	3 marks	.....	.....	.....	Infected at Larkhill Lodging-house
50	31	,, 12	,, 13	Discrete	,,	,, 8	26	3 poor marks	1	.....	.....	Not traced
51	50	Apl. 15	Apl 17	Confluent	Died	Apl 21	5	No marks	1	.....	.....	Not traced
52	34	,, 22	,, 24	Discrete	Recovered	May 20	27	1 fairly good mark	4	.....	... ..	Not traced definitely; rent collector, and has visited a large number of houses
53	28	,, 21	,, 25	Discrete	,,	,, 12	18	2 good marks	4	.....	.....	Not traced
54	19	,, 25	,, 26	Discrete	,,	,, 15	20	4 good marks	4	.....	.....	Infected at Preston or Blackpool
55	54	,, 21	,, 26	Discrete	,,	,, 12	17	1 distinct mark	3	.....	1	Not traced
56	31	,, 25	,, 28	Discrete	,,	,, 23	26	2 large marks	1	.....	.....	Imported from London (?)
57	26	,, 29	May 2	Discrete	,,	,, 20	21	2 fairly good marks	.....	.....	2	Not traced
58	27	May 7	,, 8	Confluent	,,	June 6	30	3 small distinct marks	.....	.....	.....	Infected by No. 55

Smallpox Cases Continued..

Number	Age	Date of Rash	Date of removal to Hospital	Type of Disease	Result	Date of Discharge	Days in Hospital	Vaccination Marks	QUARANTINE			REMARKS
									Re-vaccinated	Protected by Smallpox or recent Re-vaccination	Not Re-vaccinated	
59	32	May 19	May 19	Confluent	Died	May 23	5	No marks	8	.....	1	Imported from Bolton
60	35	,, 20	,, 20	Confluent	Recovered	July 5	44	No marks; said to have had Smallpox as a child	4	... ..	.....	Not traced
61	17	June 1	June 5	Discrete	Recovered	June 26	21	4 large marks	8	1	.....	Not traced
62	32	,, 12	,, 14	Discrete	,,	July 20	37	3 good marks	30	2	4	Infected by No. 63
63	40	May 31	,, 14	Discrete	,,	June 30	17	2 indistinct marks	.....	.....	.....	Not traced; was ill for 17 days before he was discovered
64	42	June 14	,, 15	Confluent	,,	July 15	31	No marks	3	.....	2	Infected from No. 63; the infection being carried by two musicians not themselves affected

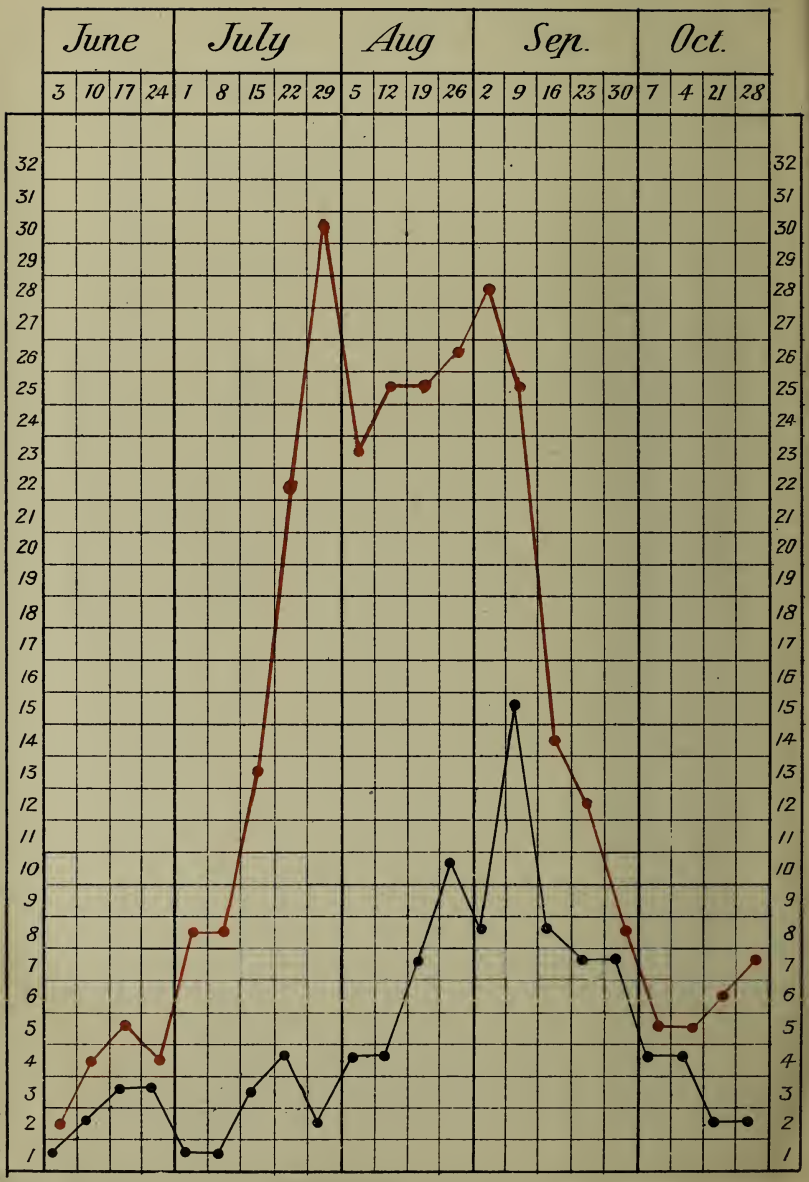
65	27	June 14	June 16	Discrete	Recovered	June 30	15	3 good marks	1	.....	. ....	Infected by No. 63
66	34	,, 16	,, 17	Confluent	,,	Aug 9	54	2 marks	.. ...	.....	.....	Do.
67	16	,, 14	,, 19	Discrete	,,	July 13	25	2 fairly good marks	4	2	.....	Not traced; possibly No. 63
68	38	,, 16	,, 19	Discrete	,,	,, 17	29	4 good marks	7	.....	.....	Not traced; possibly No 63
69	33	,. 16	,. 20	Discrete	,,	,, 11	22	3 indistinct marks	.....	.....	3	Infected by No. 63
70	42	,, 21	,, 22	Discrete	,,	,, 15	24	1 indistinct mark	4	.....	.....	Do.
71	18	June 29	June 30	Discrete	Recovered	July 21	22	3 fair marks	.....	.....	.....	Infected from No. 67; vaccinated 7 days before commencement of illness; it did not take
72	21	July 1	July 4	Discrete	,,	Aug 9	37	3 good marks	6	. ....	.....	Not traced
73	8	,, 1	,, 4	Discrete	,,	July 17	14	3 large marks	4	2	.....	Not traced
74	34	,, 4	,, 4	Confluent	,,	Sept 28	87	1 mark	.....	.....	.....	Traced to No. 69; refused vaccination; removed from Quarantine
75	33	,, 5	,, 5	Confluent	Died	July 14	10	1 good mark	.....	.....	.....	Do

Smallpox Cases Continued.

Number	Age	Date of Rash	Date of removal to Hospital	Type of Disease	Result	Date of Discharge	Days in Hospital	Vaccination Marks	QUARANTINE			REMARKS
									Re-vaccinated	Protected by Smallpox or recent Re-vaccination	Not Re-vaccinated	
76	26	July 8	July 9	Discrete	Recovered	July 29	21	2 good marks	2	2	.....	Not traced
77	32	Aug 16	Aug 17	Discrete	,,	.....	...	3 marks	1	.....	.....	Probably husband; the husband seemed to have suffered from a very mild attack which had not been diagnosed
78	6	... ..	,, 17	Confluent	Died	.....	...	Not known	.....	.. ...	.....	Probably from father
79	18	.....	,, 18	Discrete	Recovered	.....	...	3 marks	4	.....	.....	Not traced

CHART 3.

DEATHS FROM DIARRHŒA



DIARRHŒA.

There were 287 deaths from diarrhœa in 1893, compared with 108 in the previous year. This is the largest number of deaths from diarrhœa during the last ten years. The great excess was due, no doubt, to the extremely hot summer. Diarrhœa is supposed not to begin until a thermometer placed at the depth of 4 feet in the soil reaches 56 degrees Fahrenheit—(Chart 4). As a rule this does not occur until late in August, and the highest mortality is in September. This year the great rise came at the end of July, or nearly two months before the usual time. Chart 3 compares the epidemic of this year with last year, and shows not only its much greater severity, but also its earlier commencement. The epidemic of diarrhœa assumed such large proportions that I made a special report on the subject at the meeting of the Health Committee in August. Map II shows the position of the deaths from this disease, and also the death-rate in the districts where it was heavy. Two points are evident. The first that the deaths are much more numerous in the eastern than in the western half of the town. The second is the very high mortality in the Audley district. In estimating the mortality of a disease like diarrhœa which principally affects young children, the age distribution of the population of the district should be known in order to be quite accurate. This, however, we have not been able to obtain. How can these great differences of distribution of the disease be accounted for? The conditions that favour diarrhœa are:—

(1) A polluted soil and atmosphere.

(2) A high temperature.

(3) Overcrowding, with obstruction of light and air.

(4) Careless feeding.

Of these it is only the pollution of air and soil and the overcrowding that can be held to explain any difference in the mortality of the various districts. The pollution of air and soil is principally due to unpaved surfaces, leaking middens, defective drains, refuse tips, and foul sewers.

The following table shows the various forms of sanitary conveniences in the different districts :—

Districts.	Population at 1891 Census.	Deaths from Diarrhœa.	Death-rate from Diarrhœa.	Sanitary Conveniences.				
				Wet Ashpits.	Tubs.	W. C.'s.	Total.	Wet Ashpits as Percentage of Total.
A	8519	53	6·4	434	658	317	1409	30 per cent.
B	5224	22	4·2	228	498	193	919	25 per cent.
C	10892	38	3·5	445	965	400	1810	24 per cent.
D	8164	18	2·2	404	642	469	1515	26 per cent.
E	7883	20	2·5	342	859	167	1368	25 per cent.
Remainder of Borough	83324	138	1·6	2293	7265	5454	15012	15 per cent.

BLACKBURN

Registration Sub-Districts.

MAP SHEWING

Deaths from Diarrhœa in 1893 marked thus •

H. Whitehead, Lith. Blackburn

These districts have a considerably larger proportion of middens than the rest of the borough. In the neighbourhood of Audley there is a large tip which may have had some influence on the excessive amount of Diarrhœa in this district. There is nothing for special comment about the drainage or sewerage of the district. It is not particularly overcrowded, and the arrangement of streets is good for light and air. The district is at an elevation of almost 482 feet, or about 104 feet above the centre of the town.

The recommendations I made were :—

1. That tipping, as a means of disposal of refuse, be given up; that a destructor be built to burn such refuse; and that until the destructor be ready the refuse be carted away to some more sparsely populated district.

2. That under no circumstances an excreta tub be emptied and put back without cleansing, and that cleansing be always accompanied by disinfection.

3. That every ashpit be emptied at least once in two months.

4. That a ventilating chamber be put in every bend and junction in the sewers, so that the inspection for deposit can be carried out effectually and systematically.

5. That the conversion of trapped middens into water-closets be proceeded with, beginning with those that are in a bad state of repair.

6. That the cleansing of the river before next summer be attended to with greater regularity. (The difficulties in the way of cleansing this summer have been

partly due to the deficiency of water, and partly to our having no power of raising the weirs.)

These recommendations have only, as yet, been very partially carried out.

Besides these I would recommend that the streets should always during hot dry weather be watered before they are swept; that the sewers be flushed regularly during the dry weather, and the street gullies be cleansed more frequently, and water be added after cleansing.

Notices were posted stating the precautions that should be taken against Diarrhœa.

Analysis of Deaths in Months of Age.

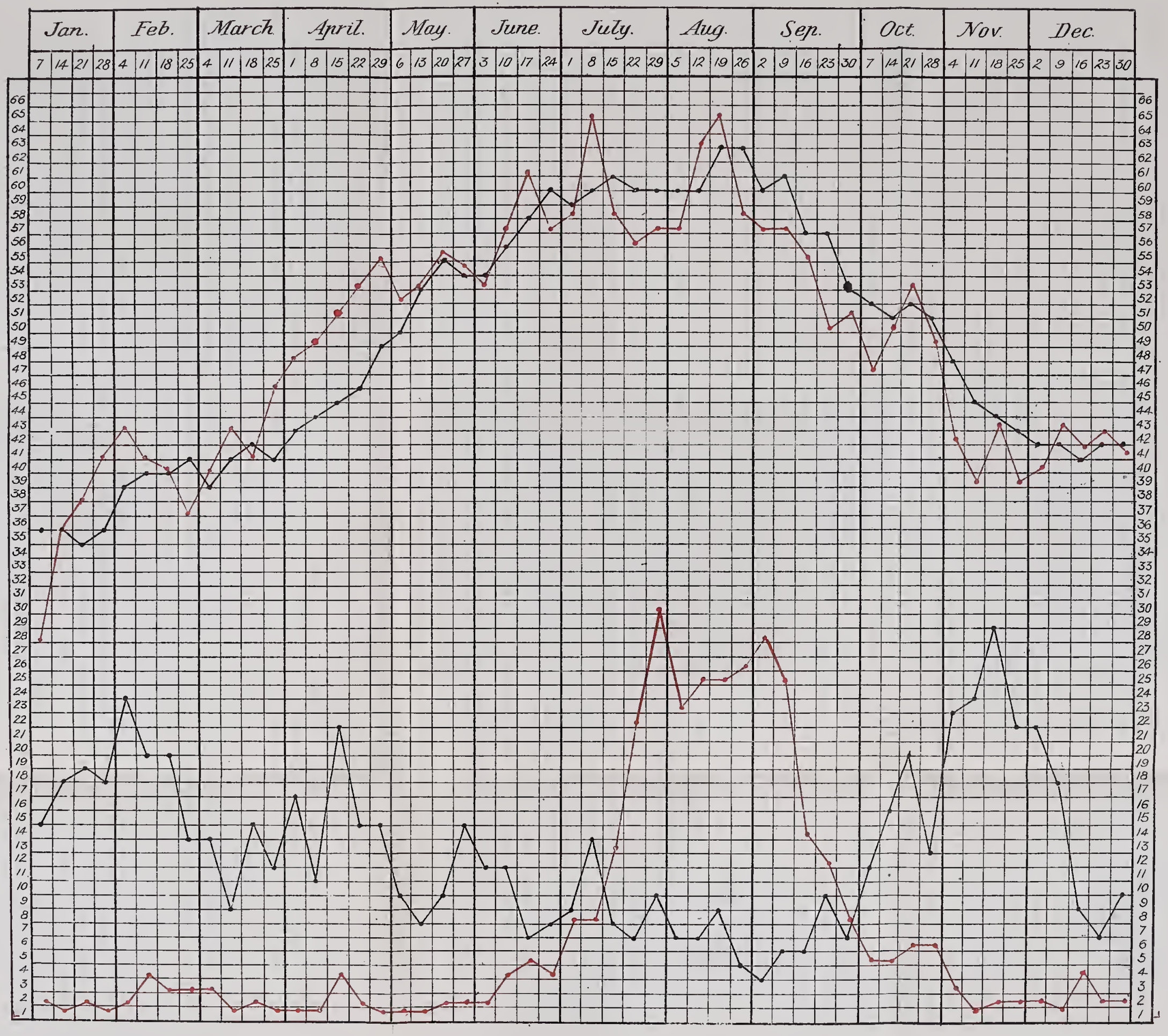
Under 1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12
15	22	21	25	22	20	20	17	7	7	11	3

Without attempting to diminish the importance of these insanitary conditions that have been mentioned, it still remains an undisputed fact that one of the principal causes of Diarrhœa amongst children is careless feeding by the bottle at an early age. A very large proportion of the children are left after the first month to be brought up by hand. There is no doubt that it is along with the food that is then given that the poison is introduced into the body. The milk is allowed to stand in an impure atmosphere, the bottle and tube are not thoroughly cleansed, and in some such way the food becomes contaminated. Very few of the cottage houses have a suitable place for keeping food. A cupboard as far as possible from the living room, and ventilated to the outside by perforated zinc, would not be expensive, and would be very useful.

Cholera.

Only one suspicious case occurred. Some infective material from this patient was sent up to Dr. Klein for examination. He was, however, of opinion that some disinfectant had been added,

CHART 4.


Jan. 7 14 21 28
Feb. 4 11 18 25
March 4 11 18 25
April. 1 8 15 22 29
May. 6 13 20 27
June. 3 10 17 24
July. 1 8 15 22 29
Aug. 5 12 19 26
Sep. 2 9 16 23 30
Oct. 7 14 21 28
Nov. 4 11 18 25
Dec. 2 9 16 23 30
66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
TEMPERATURE AT A DEPTH OF 2 FEET.
MEAN TEMPERATURE
DEATHS FROM ACUTE LUNGS.
DEATHS FROM DIARRHŒA

and that this prevented any satisfactory examination. The usua precautions were taken, and there were no further cases.

Influenza.

There can be no doubt that there was a widely diffused epidemic in October, November, and December. This disease has shown itself in many different forms during the last four or five years, but it has always preserved certain characteristics Its entreme infectiousness, its rapid onset, the weakness which it leaves afterwards, seem to have characterised each epidemic. The most striking feature about the last epidemic, so far as this town is concerned, was its mild character. It has apparently exhausted itself, and may not unlikely disappear now in its epidemic form for many years. In order to guage as far as possible to what extent influenza had affected the town, circulars were addressed to the factories asking for information. In most cases they were very kindly filled up and returned.

The information asked for was the number of workpeople employed, and the number that had been off work from influenza during the three weeks ending November 9th. No doubt some cases were put down to influenza that were due to some other causes. Still there evidently was a very general and widespread epidemic, fortunately of a mild character.

Analysis of Replies.

	Total Number.	Number Affected.	Percentage.
Weavers	12,308	1,024	8·3
Spinners	2,318	163	7·0
Winders and Warpers.....	2,352	260	11·0
Total.....	16,978	1,447	8·5

The following are the deaths from Influenza during the last twelve weeks of the year :—

Week ending	Number.	Week ending	Number.
Oct. 14	0	Nov. 25	6
„ 21	2	Dec. 2	4
„ 21	1	„ 9	4
Nov. 4	3	„ 16	3
„ 11	1	„ 23	4
„ 18	4	„ 30	1

By referring to Chart IV. it will be seen that the deaths correspond with the rise in death-rate from acute lung diseases.

Lung Diseases (not including Phthisis).

There were 672 deaths from lung diseases, making a death-rate of 5·4 per 1,000. This is an increase of 25 compared with 1892.

TUBERCULOSIS.

There were 276 deaths from tuberculosis compared with 251 last year.

Deaths fr - Tuberculosis for Four years.

	1893.				1891.		1890.	
	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.
General Tuberculosis ...	35	·28	26	·21	18	·15	12	·10
Tabes Mesenterica	80	·64	61	·49	54	·44	51	·42
Acute Hydrocephalus and Tubercular Meningitis	25	·20	32	·26	24	·2	21	·17
Phthisis	134	1·0	132	1·0	163	1·35	214	1·8
Other Forms	2	·001	...	...	...	...	4	·003
	276	2·2	251	2·0	259	2·14	302	2·5

The increase is almost entirely amongst the cases of abdominal tuberculosis.

Table X. shows a diminition of the death-rate from phthisis since 1881 from 1·9 to 1·0. The average of the first half of this period is 1·7, and the average the second half is 1·3.

The notification of tuberculosis is now being advocated by a considerable number of medical men. In my last report I pointed out some of the advantages that would be gained by notification. Unlike most infectious diseases there is no necessity for isolation, as the infective material can readily be dealt with. In many health resorts frequented by phthisical persons, the necessity for these precautions is seen, and the patients carefully instructed. The first obstacle to overcome is to see that the patients get the necessary knowledge so that they may destroy all infective material. The second, which is far more difficult, is to see that this knowledge is acted up to. Very little, however, can be done until the cases are notified. The difficulty of diagnosis as regards pulmonary tuberculosis in the early stages is almost entirely overcome now by use of the microscope.

From the Infirmary I have recently obtained the addresses of those persons suffering from tuberculosis. Their homes have been visited, defects looked for, and instructions given. This is the only substitute at present for notification.

The following directions have been drawn up and distributed :—

"Directions for Preventing the Spread of Consumption.

"I.—It is well known that Consumption is spread by the dried phlegm of consumptive persons. To lessen the danger of spread in this way :—

"1. Persons suffering from Consumption should not spit on the floor of any room, workshop, public building, or conveyance.

" 2. At home they should use a spitting cup containing disinfectant, or spit into the fire. The spittoon should be emptied into the fire or sewer outside, and thoroughly cleansed at least twice a day.

" 3. Away from home they should spit into a rag which should be burned as soon as possible. Spitting into a handkerchief is objectionable, but if it be done, the handkerchief should be boiled for ten minutes afterwards.

" 4. The rooms occupied by a consumptive person should be washed every month or two with hot water containing eight tablespoonsful of carbolic acid to the gallon. Water should be sprinkled on the room floors before sweeping, and the sweepings should be burned.

" II.—Food may also spread the disease. To lessen this danger :—

" 1. All milk should be boiled before it is used for food.

" 2. Meat should be thoroughly cooked before it is eaten.

" 3. A consumptive mother should not suckle her child.

" III.—Dampness, darkness, dirt, and want of ventilation favour the preservation of the germs, whilst sunlight and fresh air destroy them, and cleanliness prevents them lodging.

" It is then of the utmost importance that the house should be *dry*, that it should admit of *plenty of sunlight*, that it should be capable of *free ventilation*, and that it should be kept *clean*.

" The bedroom windows should be open all day long, and a little even at night. The fireplace should never be stopped up. The bedroom furniture should be scanty and no dust allowed to accumulate. The sitting room windows should be kept open as

far as practicable during the day. At the same time direct draught should be avoided.

"It is better for a consumptive person to sleep alone in a large airy room. Living in the open air should be encouraged and crowded rooms whether at home, or at workshops, or at public meetings. should be particularly avoided.

"These hygienic precautions not only act beneficially by destroying the germs of the disease, but by what is perhaps more important, viz.:—improving the health of the body so as to resist these germs. They should be attended to by all persons whether consumptive or not.

"HEALTH OFFICE,
BLACKBURN,
"April, 1894."

The 80 deaths from abdominal tuberculosis have this significance. The infection has in most cases entered the body with the food. 52 of these deaths were under one year of age, and 20 between one and five. At this time of life milk is the principal article of food. There can be little doubt that it is from milk that most of the cases arise. The remedy is regular and thorough examination of all milk cows.

The influences of the various occupations on phthisis is mentioned under trade influences.

INFLUENCE OF OCCUPATION UPON THE DEATHS.

In last year's report the question of the influence of the cotton trade upon the health of the people was entered into at some length. It was felt, however, that before drawing any very positive conclusions, more extended statistics were required. The death-rates in the various branches of the trade and in different age periods were worked out for three years. They have now been obtained for a period of five years. As far as the weavers are concerned, this should give fairly satisfactory and stable results. The other cotton operatives are much smaller in number, and the statistics with regard to these cannot be regarded as so conclusive.

TRADE CENSUS (1891).

	10 to 15		15 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 and upwards.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Weavers	2064	2703	3472	6704	1669	3798	983	1642	617	636	272	164	101	24
Spinners	189	75	539	230	699	107	466	33	205	11	136	9	44	2
Winders, Warpers, Tapers, &c.	305	401	534	1727	325	1206	198	665	68	319	36	105	23	23
Cardroom Hands.	52	85	128	388	120	461	93	275	54	130	27	31	3	10
Other Cotton.	234	14	487	52	587	45	469	31	289	8	119	4	29	1
Total Population of Borough.	6623	6865	10680	12941	8974	10765	6701	7598	4491	5585	2700	3338	1514	2007

DEATHS DURING 1893.

Age Periods	Weavers	Spinners	Winders, Warpers, etc.	Card Room Hands	Other Cotton.	Borough.
15 to 25	45	3	13	3	6	112
25 to 35	25	6	14	2	2	132
35 to 45	45	8	8	6	3	203
45 to 55	13	6	15	6	6	206
55 to 65	26	4	4	—	5	282
65 and upwards	18	18	9	2	10	396

DEATH RATES FOR 1893.

Age Periods.	Weavers	Spinners	Winders, Warpers, etc.	Card Room Hands.	Other Cotton.	Borough
15 to 25	4·4	3·9	5·7	5·8	11·1	4·6
25 to 35	4·5	7·4	9·1	3·4	3 1	6·4
35 to 45	17·1	16·0	9·2	16·3	6·0	13·6
4 50 55	10·3	27·7	38·7	32·6	20·2	19·7
55 to 65	59·8	27·6	28·3	0·0	40·6	45·1
65 and upwards.	144·0	391·3	195·6	153·8	333·3	106·8

The most notable feature about the foregoing Table is absence of regular increase of the death rates with the age periods. This entirely disappears when dealing with several years.

Deaths during 1889, 90, 91, 92, 93.

Age Periods.	Weavers	Spinners	Winders and Weavers &c.	Card Room Hands	Other Cotton.	Borough
15-25	215	27	59	16	15	652
25-35	131	32	58	22	19	778
35-45	149	40	51	26	27	1118
45-55	96	31	43	27	30	1233
55-65	139	52	31	14	50	1570
65 and upwards	118	62	53	13	43	2029

Death Rates for 1889, 90, 91, 92, 93.

Age Periods.	Weavers	Spinners	Winders and Warpers &c.	Card Room Hands	Other Cotton.	Borough
15-25	4.2	7·0	5·2	6·2	5·5	5·5
25-35	4·8	7.9	7·5	7·5	6·0	7·8
35-45	11·3	16·0	11·8	14·1	10·8	15.6
45-55	15·3	28·7	22·2	29·3	20·2	24·4
55-65	62·0	71·7	43·9	48·2	81.3	52·0
65 and upwards	188·0	269·5	230·4	200·0	286·6	115·2

The statistics for these five years will be seen to be in every important particular the same as for those years published in last year's Report. As before the death-rates amongst weavers were lower than those of the Borough for every age period up to 55, and the death-rates over this age period greatly exceeded the those of the Borough. Again the death-rates amongst weavers up to 55 were considerably lower than those of any other cotton group. The natural deduction from these figures is that weaving is the most healthy of the cotton occupations. How it stands with regard to other trades in the borough it is impossible definitely to say, because the group of unoccupied persons may affect the death rates considerably.

Before accepting this conclusion, however, there are certain points to be considered. The most important is probably that some of the weakly children are rejected by the factory surgeons as unfit for employment in the mills. I have tried to find out whether this influence is considerable or not, but I have not been able, so far, to form an opinion.

The weaving sheds have in the past received far greater attention than any other part of the mill. They are now well ventilated, there is a very fair cubic space per head (about 1,500 feet), and the sanitary conveniences are improving considerably. All this cannot be said of the other parts of the mill. The ventilation of these is in very many cases neglected altogether. In the winding and warping room there is usually no special ventilation. In the spinning room there is mostly a large amount of space, but the temperature is generally very high, and the ventilation is very poor.

PHTHISIS 1893 to 1894.

DEATHS.

Age Periods.	Weavers.	Spinners.	Winders and Warpers, etc.	Card Room Hands.	Other Cotton	Borough.
15 to 25	62	8	19	5	2	178
25 to 35	49	10	25	5	6	121
35 to 45	24	9	6	7	7	161
45 to 55	11	2	0	6	4	93
55 to 65	10	0	1	0	1	40
65 & upwards	0	0	2	0	1	9
Total ...	156	29	53	23	21	602

DEATH RATES.

Age Periods.	Weavers.	Spinners.	Winders and Warpers, etc.	Card Room Hands.	Other Cotton	Borough.
15 to 25	1·2	2·0	1·7	1·9	·7	1·4
25 to 35	1·8	2·4	3·2	1·7	1·9	1·1
35 to 45	1·8	3·6	1·4	3·8	2·8	2·1
45 to 55	1·8	1·8	0·0	6·5	2·7	1·7
55 to 65	4·5	0·0	1·4	0·0	1·6	1·3
65 & upwards	0·0	0·0	8·7	0·0	6·6	0·5
At all ages over 15.	1·5	2·3	2·0	2·6	1·9	1·5

Phthisis of all diseases is the best index of insanitary conditions due to overcrowding, bad ventilation, and irritating dust in the air. These figures are necessarily small, and it seems hardly safe to draw conclusions from them; but what makes it more probable that they are near the truth is that they point generally in the same direction as the general death-rates.

DEATHS DURING 1889 TO 1893 IN DIFFERENT TRADES.

Card-room Hands:—

Age Period.	Deaths from Phthisis.	Total Deaths.	Deaths from Phthisis expressed as a per centage of total deaths.
15 to 25	5	16	31·2
25 to 35	5	22	22·7
35 to 45	7	26	26·9
	17	64	26·5

Spinners:—

Age Period.	Deaths from Phthisis.	Total Deaths.	Deaths from Phthisis expressed as a per centage of total deaths.
15 to 25	8	27	29·6
25 to 35	10	32	31·2
35 to 45	9	40	22·5
	27	99	27·2

Weavers:—

Age Period.	Deaths from Phthisis.	Total Deaths.	Deaths from Phthisis expressed as a per centage of total deaths.
15 to 25	62	215	28·8
25 to 35	49	131	37·4
35 to 45	24	149	16·1
	135	495	27·4

Winders and Warpers, etc. :—

Age Period.	Deaths from Phthisis.	Total Deaths.	Deaths from Phthisis expressed as a percentage of total deaths.
15 to 25	19	59	32·2
25 to 35	25	58	43·1
35 to 45	6	51	11·7
	50	168	29·7

Bakers, Shopkeepers, Tailors, Cobblers, etc. :—

Age Period.	Deaths from Phthisis.	Total Deaths.	Deaths from Phthisis expressed as a percentage of total deaths.
15 to 25	12	50	24·0
25 to 35	17	56	30·3
35 to 45	12	65	18·4
	41	171	24·0

Labourers, Cartmen, Farmers, and Gardeners :—

Age Period.	Deaths from Phthisis.	Total Deaths.	Deaths from Phthisis expressed as a percentage of total deaths.
15 to 25	12	68	17·6
25 to 35	19	90	21·1
35 to 45	29	176	16·4
	60	334	17·9

This table only shows that the proportion of deaths from phthisis amongst cotton operatives is much larger than amongst out-door labourers.

Deaths from Bronchitis and Pneumonia.

For Five Years 1889-1893.

Age Periods.	Weavers.	Spinners.	Winders and Warpers, etc.	Card Room Hands.	Other Cotton	Borough.
15 to 25	45	5	9	1	5	135
25 to 35	24	12	3	3	5	180
35 to 45	41	8	14	4	7	338
45 to 55	43	17	21	11	11	471
55 to 65	52	30	9	5	19	647
65 and upwards	47	20	16	8	18	689
Total ...	252	92	72	32	65	2460

DEATH RATES.

Age Period.	Weavers.	Spinners.	Winders and Warpers, etc.	Card Room Hands.	Other Cotton	Borough.
15 to 25	·9	1·3	·8	·4	1·8	1·1
25 to 35	·9	2·9	·4	1·0	1·5	1·8
35 to 45	3·1	3·2	3·2	2·1	2.8	4·7
45 to 55	6·9	15·7	10·8	11·9	7·4	9·3
55 to 65	23·8	41·3	12 7	17·2	30·9	21·4
65 and upwards	75·2	86·9	70·0	123·0	120·0	39·1
	2·5	7·4	2·7	3·7	6·1	6·3

Taken as a whole the death-rates from lung diseases were lower amongst the cotton operatives than in the borough generally The single exception is that of spinners. The excessive temperatures of spinning rooms may possibly have some effect in causing this; but the numbers are still small and consequently not conclusive.

SANITATION.

During the year 161 middens have been converted to water closets. There are at present

Water Closets	7,377
Middens	3,985
Tubs.....	10,887

A few trapped middens have been altered, but the majority have been untrapped ones. The untrapped middens are now mostly abolished. The conversion of trapped middens should be proceeded with. There is, however, one danger in changing middens into water closets which should not be overlooked. So long as the drains had only slopwater sewage to carry, the importance of making them watertight was not so evident. Many of the old drains are extremely bad. Some even are built roughly of stone or bricks. It is to these drains that there is a danger of water closets being connected. Unless they are carefully inspected, and, if necessary, tested, little benefit is likely to accrue in many cases from conversion. In judging the incidence of typhoid fever, it seems pretty clear that the houses with middens have been attacked more than the others. The same is seen with regard to diarrhœa.

The sanitary accommodation of many of the mills has improved considerably. There is still however much room for reformation. It is particularly in those cases where closets are entered directly from the sheds that there is much danger. All these closets should certainly be on the water carriage system and ventilated as well as possible.

Collection and Destruction of Refuse.

During the year there was a considerable increase of refuse destroyed at the destructor. It has very nearly reached the amount expected, viz : 48 tons a day. In my last years report I referred to the necessity for building another destructor, and again in my report on diarrhœa I pointed out the desirability of giving up

tipping in the town altogether. The only alternative to burning is to tip in an uninhabited district. It has been decided to try this. No complaints whatever have been received with regard to the destructor.

REFUSE DESTROYED AT DESTRUCTOR YEAR ENDING, 1893.

Month Ending	Midden Refuse.			Ashpit Refuse.			Fish, Carcases, Market Refuse, &c.			Total.		
January 28.....	815	18	0	89	18	0	42	4	2	948	0	2
February 25 ...	775	6	0	133	0	0	37	18	0	946	4	0
March 25	817	5	0	137	4	0	37	6	0	991	15	0
April 29.....	959	6	0	124	13	0	36	6	2	1120	5	2
May 27	799	13	0	87	15	0	32	16	0	920	4	0
June 24	952	2	0	113	4	0	38	3	0	1103	9	0
July 29	928	15	0	267	12	0	62	8	0	1258	15	0
August 26	648	1	0	247	9	0	32	5	2	927	15	2
September 30..	964	3	0	348	16	0	66	0	0	1378	19	0
October 28 ...	668	10	0	380	9	0	38	16	2	1087	15	2
November 25...	827	9	0	273	16	2	48	10	0	1149	15	2
December 30...	902	6	0	339	11	0	65	17	0	1307	14	0
	10,058	14	0	2,543	7	2	538	11	0	13140	12	2

REFUSE TIPPED :—

Midden Refuse—5,738 Tons. Ashpit Refuse—26,829 Tons.

Wet and Dry Ashpits Emptied 45,904
Execreta Tubs ,, ... 604,608
Ash Tubs ,, ... 314,924

Building Bye-laws.—In my last two health reports the necessity for some building bye-laws has been pointed out. They are required particularly for the following purposes:—

1. For causing the foundations of houses to be covered with a layer of concrete, and for preventing building on made land until it has stood sufficiently long for any organic matter to be rendered innocuous.

2. For causing a damp-proof course to be put in all houses.

3. For regulating the structure of walls so that all outside walls shall have a cavity or a vertical layer of mortar. Bricks are pervious, and will not of themselves prevent some moisture passing through.

4. For ventillation of the space under the uncellared houses, and for ventilating rooms.

5. For preventing structural alterations being made without submitting plans.

6. For regulating the position of water closets in houses, for fixing the minimum size of window space necessary, and other permanent ventilation.

7. For regulating size, jointing and gradient, and ventilation of house drains; also the position and ventilation of soil pipe.

8. For causing all cellar drains to discharge over a gully in an area.

9. For disconnecting all house drains from the sewer.

Perhaps the first two are the most important. The second of these is a matter so easily accomplished and so important that it is extraordinary that it has never been enforced.

Another serious defect in the construction of a large number of the cottage houses is that the bedrooms are fed with foul air from the sitting-rooms. The stairs should always lead from a lobby inside the front door and not directly from the rooms themselves.

WATER SUPPLY.

8 samples of water have been submitted to the public analyst for analysis with the following results:—

No.	Total solid matter	Organic Carbon and Nitrogen	Ammonia	Ammonia.	Nitrogen as Nitrates and Nitrities.	Chlorine.	REMARKS.
1	5·48	Trans only.	·002	·01	·000	1·1	Very soft clear, neutral, slight deposit containing diatoms and organic matter. This water is fairly pure, but has not been filtered as it ought to have been.
2	27·8	Considerable quantities	·028	·008	·000	1 7	Contains large iron deposit —This sample contains many impurities, and is not a nice water, but I cannot say that it is dangerous.
3	59·6	do	·196	·002	·415	5·6	Contains organisms.—This sample is very impure, and is quite unfit for domestic use.
4	124·2	do.	·44	·001	Much Nitrites. ·284	11.6	Very hard —This sample is very impure, although it looks better than it is. It contains half oxidised animal matter and is quite unfit for domestic use.
5	81·4	Traces only.	.03	·008	·000	3.0	Hard, and contains iron and other mineral waters. This sample is passable.
6	86·0	Considerable quantities	·126	·016	·437	8·4	Hard and slightly turbid, contains various organisms. This sample contains many impurities, both of mineral and animal origin. The animal matter has been very imperfectly oxidised. It is not satisfactory water for domestic purposes, and ought not to be drunk without being boiled. Sources of animal pollution should be searched for and cut off.
7	35 2	Traces only.	·001	·001	Traces	2·0	Contains small quantities of vegetable matter coloured by iron. This sample is wholesome water
8	45·0	Traces.	·012	·006	·000	6·0	Contains small quantities of vegetable matter coloured by iron and harmless organisms. This sample is wholesome water, but requires filtering.

Nos: 3, 4 and 6 were samples of water taken from wells. These wells were closed at once.

The Corporation water has now been connected to all those houses in Livesey which were previously supplied from two local sources. The two supplies together furnished water to about 250 houses. In my opinion they were neither of them free from danger. There are now comparatively few houses which have not this water.

During the summer the reserve supply was only 67 days. Water had to a certain extent to be economised, and could not be used as freely as one could have wished for flushing purposes and watering the streets.

DISINFECTORS.

A new disinfector has been built at the Infectious Diseases Hospital. It is proposed to use this not only for the hospital, but as a disinfecting station for the whole town. It consists of a chamber in which the articles are put and which is surrounded by double walls. The cavity between the walls acts as a boiler. The doors of the chamber also contain cavaties in which steam circulates. This arrangement is to prevent condensation. The disinfecting agent is superheated steam. Hot air can be turned in before the steam to prevent much condensation on the articles to be disinfected, and afterwards to dry them. At present it takes almost 1½ hours to get up steam. Ten or fifteen minutes' exposure at 20lb. pressure is quite sufficient for disinfecting any ordinary kind of bedding. A thermometer was put in the centre of a horse hair mattress and exposed for ten minutes at a pressure of 20lbs. At the end of this time the thermometer stood at 259 degrees F. The temperature in the chamber did not rise above 255 degrees F., and the rise of 4 degrees was no doubt due to condensation in the mattress. Steam at this temperature will destroy in a few minutes all organisms.

OPEN SPACES.

There are a few more important matters which concerns the health of a town than the provision of open spaces in the more crowded parts. It is therefore a matter for congratulation that the first step towards securing these spaces has been made. At the meeting of the General Purposes Committee, February 19th, 1894, the following resolution was passed :—" That in the opinion of this Committee the Corporation should, as opportunity offers, secure sites in thickly populated districts as open-air spaces and for public playgrounds, each case to be dealt with upon its own merits."

The use of these open spaces is twofold. They form good playgrounds for the children in the neighbourhood, and they diminish the evil effects of overcrowding if chosen carefully. As a playground they differ materially from the playgrounds and parks on the outskirts. They are just at hand and can be utilised at any time for a few minutes. They would allow that desire for active movement, which is present in most healthy children, to develop naturally. The only playground, except for waste pieces of land, that children in the town have at present are the school yards. These are hopelessly insufficient in size. It is possible in some cases that school grounds and open spaces might be combined.

Insanitary Dwellings.—*Nos. 148, 144, 144a, 148a, Moor Street.* These were four back to back houses affording no through ventilation, and with the usual inconveniences of houses of this class. They were ordered to be made into through houses or closed. The order wss complied with.

No. 146 Moor Street. This was a cellar dwelling. It was ordered to be closed as unfit for human habitation.

Nos. 30 and 32 Back Syke Street. These were two cellar dwellings. They were ordered to be closed or made part of the houses above, and not used as bedrooms.

Nos. 33, 35, 37, 39, Back Pearson Street. These were four houses in an extremely bad state of repair. They were ordered to be closed as unfit for human habitation.

Nos. 6, 8, 10 and 12, *Mount Pleasant.* These were four back to back houses. They were ordered to be made into through houses. This order was not complied with and the houses were closed. The necessary work has since been done and the houses have been opened.

Nos. 14, 16, 18, and 20, Mount Pleasant. These houses were ordered to be closed unless certain alterations were made. The alterations have been made and the houses kept open.

Nos. 1, *2, 4, 6, 8, 10, and 12, Copy Street; 4, 6, 8, and 10, Shackleton Street; 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, and 30, Dock Street.* These houses have been a source of great trouble for many years. The closets, drainage, surface of yard, etc., were constantly in a state injurious to health. The houses themselves were in many respects very insanitary. Certain alterations were ordered to be made or the houses closed. The work was not carried out and the houses were closed early this year. Since then the alterations have been begun.

Nos. 11 and 13, High Street, and 30 and 32, Salford. These were four back-to-back houses. They were ordered to be made into through houses or closed as unfit for habitation. The alterations have not been made, and the houses have been closed.

Nos. 28 and 34, Salford. These were two cellar dwellings. They were ordered to be closed as unfit for habitation.

Nos. 50 and 52, Limbrick. These were two back-to-back houses with no closet accommodation and other defects. They were ordered to be made into one house, closet accommodation provided, and other defects remedied. The work was not carried out, so the houses were closed.

No. 2, Morton Street, and 40, Kirkham Lane. These were two back-to-back houses. They were ordered to be made into one house or closed. The alteration was made.

Nos. 58, 60, and 62, Grimshaw Park: 1, and 3, Mosley Street. These houses were in a very dilapidated condition. They were ordered to be put into a sanitary condition or closed. The work was not carried out and the houses have been closed.

Nos. 2, 4, 8, 10, and 12, Jardine Street. These houses form part of a group of houses mentioned in my last year's report as being extremely insanitary, on account of having no through ventilation, and the space between them and the opposite houses being very small and occupied to a considerable extent with sanitary conveniences. They were ordered to be altered so as to allow through ventilation and proper yard space. This has been done by removing alternate houses.

Nos. 1, and 1a, Jardine Street, were ordered to be altered satisfactorily or closed. The alterations were made.

Nos. 5 and 7, Jardine Street, and 35 and 37, Moor Street These were two back-to-back houses. They were ordered to be made into through houses or closed. The work was done so that there was no necessity for closing them.

Nos. 75, 77, 79, 81, Cleaver Street. These were back-to-back houses. They were ordered to be made into through honses. The order was not completed so the houses were closed.

No. 12, 18, 20, 22, *Cannon Street.* These houses were ordered to be altered or closed. The alterations are mostly carried out and the others are being done.

No. 29 *and* 31, *Tontine Street.* These were two back-to-back houses. They were ordered to be made into through houses. The alterations were made.

OVERCROWDNG

Not many cases of bad overcrowding have come under the notice of this department during the year. The following is a statement taken from the 1891 census giving the number of occupants in houses of various sizes. It is evident from this that there is a certain amount of overcrowding. One difficulty in dealing with overcrowding is due to the fact that it is continually moving. When action is taken it often simply results in moving the overcrowding from one house to another.

Total houses.	Total number of houses with over 5 rooms.	Total number of houses with less 5 rooms.
24,682	8,889	15,793

Analysis of houses with less than 5 rooms.

Rooms in House.	Number of Houses.	Number of Occupants of Houses.											
		1	2	3	4	5	6	7	8	9	10	11	12 or more.
1	85	17	32	17	7	3	4	3	1	0	1	0	0
2	592	94	178	116	81	49	41	16	11	5	0	0	1
3	404	44	105	78	59	33	36	20	18	6	2	3	0
4	14712	354	2307	2688	2688	2207	1689	1224	810	43	214	64	34

According to this table there were a few very startling cases of overcrowding. Unfortunately, the sanitary inspectors have not been able to discover them. The most marked case is that of a single roomed house in which there were ten persons.

POLLUTION OF RIVER AND CLEANSING.

The number of pollutions removed from the river last year was 23. Except for accidental pollutions, which are inevitable in all towns, and a few pollutions from manufactories, the river is now fairly free. But the condition of the water running through a large town like Blackburn, and taking surface water on its way, cannot be so pure that it can be allowed to stagnate with impunity. 1893 being a hot year the nuisance caused by the weirs was very great. The scarcity of river water, and the not over abundant supply of Corporation water rendered the cleaning of the weirs very difficult. Something should be done to prevent a similar occurrence this year.

Lodging Houses.

The inspection of the common lodging houses has been much more strict than usual during the past year, and the houses themselves may be said to be in a better condition than they have been for many years. It has been found necessary to refuse several applications for registration, and to vary the number of lodgers allowed in others. Formerly in fixing the number of lodgers nothing was taken into account but the cubic space of the bedrooms. This, of course, is extremely unsatisfactory. The ventilation and lighting of the bedrooms, the amount of day-room space, yard space, and washing accommodation are all carefully considered now before registration. As stated in the Nuisance Inspector's Report there are 51 houses accommodating about 1100 persons.

I have before pointed out to your Committee the unsuitability of a large proportion of the common lodging houses in the town. In my last year's report I advocated the building of a Municipal Common Lodging House, and quoted Glasgow and Huddersfield as two towns in which lodging houses managed by the Corporation have proved successful. This question has since been brought under your notice and has been postponed for

further consideration. Not the least of the advantages gained would be that infectious diseases amongst vagrants would be more under our control.

Houses Let in Lodgings.

I recommended last year that bye-laws be formed for houses let in lodgings. They will be of great use in regulating houses that are very difficult to deal with at present.

DRAIN TESTING.

The drains of a much larger number of houses were tested last year. This was partly due to the fact that the drains of all the houses where a case of typhoid fever occurred were tested. Altogether the smoke test was applied to 119 houses. Of these 107 were found defective. Until recently, it was not the custom to apply the test to any house that had no inside drains. It has, however, been found in a large number of instances that smoke applied to the drain in the yard will get through the foundations In consequence of the majority of the drains that were tested being found in a leaking condition, I was instructed to put before you my recommendations with regard to laying new drains. I recommended:—

1. That the joints of all Drains for conveying sewage or directly communicating with a sewer shall be made with hemp and cement.

2. That all drains shall be laid on a firm bed; if the natural bed is not firm a layer of concrete six inches in thickness shall be laid.

4. That all drains be laid under the supervision of the Highway, &c. Department and be tested by the Health Department before being covered up, and that in all cases where practicable the water test be applied.

It is certainly necessary that all drains should not only be inspected, but should be tested before being covered up. The water test is the only perfect test and it can only be applied if the joints are made with good cement. Whenever a drain in use becomes blocked temporarily, it is subjected to a similar strain as it is when the water test is applied. If the joints will not stand the water test, they will not stand a condition of this kind. The obstruction may give way, or be forced, but the drains will from that time leak.

MORTUARIES.

It is satisfactory to note that a public mortuary has at last been provided in the centre of the town. It has already proved itself to be a great convenience. In case of emergency, it will be almost invaluable.

SCHOOLS.

The sanitary condition of the schools has principally been considered from the point of ventilation. Although not much has been done in the improvement of permanent ventilation, it has been noticed that the practise of opening the windows during school and play hours is much more general. The openings for ventilation in most schools require increasing to the extent of four or five times their present area. The inlets especially are very defective. Where hot-water pipes are in use they can be utilised for warming the incoming air.

ANALYSIS OF AIR.

No. of School.	Temperature of Room.	Square feet of ventilation space for 100 scholars, including inlet and outlet.	Parts of Carbonic Acid in 1,000 parts of air.
1	63	4½	2·0
2	64	2	1·0
3	65	2	2·3
4	54	1½	1·6
5	55	5½	1·5
6	60	None	2·1
7	64	4½	1·4

PRIVATE SLAUGHTER HOUSES AND MEAT INSPECTION.

There are 21 private Slaughter houses on the Register. As I have previously mentioned they make meat inspection very difficult. Even if these were done away with, there would be the difficulty of dealing with meat slaughtered out of the Borough. A regulation to the effect that the organs of a beast must not be removed until seen by the Inspector would facilitate the inspect tion very considerably.

DAIRIES, COWSHEDS, AND MILKSHOPS.

For the better regulation of Cowsheds in the Borough. The Local Government Board Bye-laws have been adopted.

Regulations

Made by the Mayor, Aldermen, and Burgesses of the Borough of Blackburn, as the Urban Sanitary Authority for the district of the said Borough in pursuance of the Contagious Diseases (Animals) Acts, 1878 to 1890, and the Dairies, Cow-sheds, and Milk-shops Orders of 1885 and 1886.

Interpretation of Terms.

1. Throughout these regulations the expression "the Sanitary Authority" means the Mayor, Aldermen, and Burgesses of the Borough of Blackburn, acting as the Urban Sanitary Authority for the District of the said Borough, and the expression "the District" means the district of the said Borough of Blackburn.

For the Inspection of Cattle in Dairies.

2. In every case where the Medical Officer of Health, the Inspector of Nuisances, or any other officer specially authorised by the Sanitary Authority in that behalf, has, for the purpose of inspection, obtained access to a dairy in pursuance of the statutory provision in that behalf, no person shall wilfully obstruct any such officer in the inspection of the cattle therein, and the

occupier of such dairy shall not, without reasonable excuse, neglect or refuse, when required by any such officer, to render him such assistance as may be reasonably necessary for the purpose of such inspection.

For prescribing and regulating the Lighting, Ventilation, Cleansing, Drainage, and Water Supply of Dairies and Cow-sheds in the occupation of persons following the trade of Cow-keepers or Dairymen.

3. Every person following the trade of a cow-keeper or dairyman shall provide every dairy and cow-shed in his occupation with all necessary and proper means of lighting and ventilation, to secure the health and good condition of the cattle therein.

He shall not cause or suffer any greater number of cattle to be at any time kept in a building used as a dairy or cow-shed than will admit of the provision of 800 *cubic feet* of free air space for each cow.

He shall cause the ventilation of every building which subsequently to the date of the coming into force of these Regulations may be newly occupied as a dairy or cow-shed to be by means of a sufficient number of openings or windows in the walls on two opposite sides of the building, or in the wall on one side and in the roof, so as to afford effectual means of ventilation by direct communication with the external air.

Where such openings and windows are constructed so as to close, he shall, in addition, cause adequate means of constant ventilation, to be provided by openings in an external wall of such dairy or cow-shed, or by some other effectual method or appliance.

4. Every person following the trade of a cowkeeper or dairyman shall cause every dairy and cow-shed in his occupation to be thoroughly cleansed from time to time as often as may be necessary to keep the same in a clean and wholesome condition.

5.—Every person following the trade of a cowkeeper or dairyman shall, from time to time, as often as occasion may

require (except in such cases as are hereinafter specified) cause the ceiling and the internal surface of every wall of any dairy or cow-shed in his occupation to be thoroughly lime-washed or coloured :

Provided that the foregoing requirement shall not apply to any wall the internal surface of which is painted, or where the material of or with which such surface is constructed or covered, is such as to render the lime-washing or colouring thereof unsuitable and inexpedient, and so long as such surface is thoroughly cleansed.

6.—Every person following the trade of a cowkeeper or dairyman shall cause every dairy and cow-shed in his occupation to be effectually drained, so that all urine and liquid filth may be properly carried away.

He shall not cause any inlet to any drain that may be provided for the drainage of a dairy or cow-shed to be within such dairy or cowshed, and he shall cause every inlet to any drain to be properly trapped.

7. Every person following the trade of a cow-keeper or dairyman shall provide for every dairy and cow-shed in his occupation an adequate water supply of good quality, and proper for the health and good condition of the cattle therein.

He shall cause every receptacle in which such water may be placed for the use of any cattle to be emptied and cleansed as often as necessary.

In every case where the water may be stored in a cistern or cisterns, he shall cause such cistern or cisterns to be conveniently placed so as to allow of ready access, and to be properly constructed and covered so as to prevent the fouling of the water.

For securing the cleanliness of Milk-Stores, Milk-Shops, and of Milk-Vessels used for containing Milk for sale.

8.—The occupier of a milk-store or milk-shop shall, except in such cases as are hereinafter specified, from time to time, cause

the ceiling and the internal surface of every wall of such milk-store or milkshop to be thoroughly lime-whited or coloured as often as occasion may require for the purpose of keeping the premises in a state of cleanliness;

Provided that the foregoing requirement shall not apply to any wall the internal surface of which is painted, or where the materials of or with which such surface is constructed or covered, is such as to render the lime-whiting or colouring thereof unsuitable or inexpedient and so long as such surface is thoroughly cleansed.

9.—Every cow-keeper, dairyman, and purveyor of milk shall, on every day on which any milk-vessel may be used on his premises for the purpose of containing milk for sale, cause every such vessel to be thoroughly cleansed with clean hot water or steam immediately after it shall cease to be in use.

He shall cause every milk vessel that may be returned to him empty to be thoroughly cleansed with hot water or steam before being used to contain any milk for sale either by himself or by any other person.

He shall cause every milk vessel when not in use to be kept thoroughly clean.

For prescribing precautions to be taken by purveyors of milk and persons selling milk by retail against infection and contamination.

10.—A purveyor of milk, or a person selling milk by retail shall not cause any milk to be stored on his premises in any cellar or room in which there is any untrapped opening to a drain, or either in the manner of storage or of distribution do any act or thing likely to expose any milk to infection or contamination, or omit to do any act or thing necessary for the due protection of any milk from such infection or contamination.

11.—A purveyor of milk, or person selling milk by retail, shall not use for the delivery of milk for sale to any person, any can or other vessel that that may have been in the possession of

any person who, he has been informed, or has reasonable grounds for believing was at the time suffering from a dangerous infectious disorder; or any can or other vessel that may have been left at the residence of such person, until such can or other vessel shall have been thoroughly disinfected and cleansed.

Penalties

12.—Every person who shall offend against any of the foregoing regulations shall be liable for every such offence to a penalty of *five pounds*, and in the case of a continuing offence to a further penalty of *forty shillings* for each day after written notice of the offence from the Sanitary Authority.

Provided, nevertheless, that the justices or court before whom any complaint may be made or any proceedings may be taken in respect of any such offence may, if they think fit, adjudge the payment as a penalty of any sum less than the full amount of the penalty imposed by this regulation.

Commencement of the Regulations.

13.—These regulations shall come into force on and after the first day of September, 1893.

Revocation of existing Regulations.

14.—From and after the date on which these Regulations shall come into force, all regulations heretofore made under, or having effect in pursuance of, the Dairies, Cow-sheds, and Milk-shops order of 1885, shall, so far as the are now in force in the district, be revoked.

7712.

Given under the Common Seal of the Mayor, Aldermen, and Burgesses of the Borough of Blackburn, this fifth day of July, 1893, in the presence of

Seal of the Corporation of Blackburn.

HERBERT WHITELEY, Mayor.

ROBERT E. FOX, Town Clerk.

It is section 3 of the Bye-laws which has caused so much discussion. It is no doubt an injustice and a hindrance that two districts in close proximity should have entirely different regulations; one severe and the other lax. It is asserted that the amount of space fixed in these bye-laws is actually injurious. It is certainly far in excess of what has been customary. Great prominence has been given lately to the prevalence of Tuberculosis amongst the beasts of this district. Of over 400 killed under the Contagious Diseases Act, almost 20 per cent. were tubercular. The principal cause of Tuberculosis is overcrowding and bad ventilation of the cowsheds. Overcrowding lowers the general health of the cattle, and at the same time renders direct transmission of the disease much easier. Tuberculosis amongst cattle is not only a danger to the community, but it also causes very severe losses to the farmers, far greater probably, than many of them are aware of. It is a disease that can be greatly reduced or or possibly stamped out. The first step in this process is undoubtedly to procure a larger amount of air space for the cattle and better ventilation. Until this is done no great hope of improvement can be expected.

The next step is the isolation and slaughter of any beast that is suffering from tuberculosis; and thorough disinfection of the shed in which it has been living.

In order to enforce this it would be necessary to include tuberculosis under the Contagious Diseases Animals Act. Compensation would have to be given in the case of compulsory slaughter. But no compensation could well be given if the cow-sheds were still in a condition to go on producing the disease. The whole question of reduction of bovine tuberculosis rests principally then on the provision of sufficient fresh air for the cattle.

There are at present on the list 228 cow-sheds. Most of them are deficient not only in cubic space but in lighting, ventilation, and in those points of construction which facilitate ready cleansing.

Of these cowsheds :—

2	allow air space	varying from	100 and 150
0	do.	do.	150 and 200
20	do.	do.	200 and 300
51	do.	do.	300 and 400
54	do.	do.	400 and 500
40	do.	do.	500 and 600
25	do.	do.	600 and 700
8	do.	do.	700 and 800
15	do.	do.	800 and 900
8	do.	do.	900 and 1000
5	do.	do.	1000 and up.

This is calculated for the particular number of cows at the time of visiting.

The inspection of milk is at present wholly unsatisfactory. There is no doubt that all milch cows should be submitted to regular inspection. In no other way can the milk of tubercular cows be prevented from being sold. This is a matter that cannot well be dealt with by Local Authorities, because in case of towns often the greater part of their milk comes from outside districts.

In some recent experiments in Copenhagen it was found that out of 28 samples of milk collected four gave tuberculosis to rabbits when inoculated. This seems to show that the danger of transmission of tuberculosis from milk is considerable.

WORKSHOPS.

Since the inspection of Workshops was commenced last year a considerable number have been added to the list which is given below. By far the most important point with regard to the sanitary condition of the Workshops is that of ventilation and crowding.

I give some analysis of samples of air taken from different Workshops which shew an extremely unsatisfactory state of things at present. The air in some of the rooms was much worse than that of either the factories or schools.

Number of Workshop.	Number of Workpeople	Number of Gases Burning.	Ventilation.	Temperature.	Amount of Co_2
1	10	9	None.	82	3·1
2	8	3	Fireplace	78	3·1
3	6	3	Partly blocked	77	3·0
4	6	3	„	82	1·8
5	2	2	None.	70	2·8
6	5	2	„	62	2·5
7	3	2	Fireplace	58	1·8
8	23	20	None.	66	2·2

·6 volumes of Carbonic Acid is usually taken as the standard impurity. With the amount of space allowed in workshops it will never be possible to keep down the impurity to this amount. When however the impurity reaches two or three per thousand, some remedy should be applied. It will be seen that there are no special openings for ventilation, and that in only three are there any fireplaces. The difficulty is that if openings are made they will be stopped up, because in many of the rooms there is no no special means for warming. Ventilation under these circumstances will mean cold. If persons of sedentry occupation have to choose between cold or a stuffy atmosphere they invariably choose the latter. Ventilation then must go hand-in-hand with proper warming of the rooms to be of any use.

WORKSHOPS.

Trade	No. of Workshops	No. of Employees	No. of Visits
Brass Dressers	1	6	3
Brush Makers	6	24	20
Cabinet Makers and Upholsterers	14	77	80
Chair Makers	2	6	6
Chain Makers	1	2	3
Cloggers and Shoe Makers	47	110	186
Clog Sole Makers	2	4	9
Coach Builders and Coach Painters	5	55	16
Coopers	2	4	6
Cotton Waste Dealers	3	9	9
Curriers and Leather Dressers	3	14	10
Hosiers and Underclothiers	9	88	38
Joiners	12	54	40
Milliners and Dressmakers	71	388	280
Paper Bag Makers	1	12	3
Picture Framers	6	20	26
Saddlers	10	35	37
Skip Makers	1	5	3
Stocking Knitters	6	14	30
Tailors	56	310	230
Tinners	8	41	37
Weighing Machine Makers	2	9	7
Wire Workers	1	6	3
Wheelwrights	4	12	18
Herb Beer Makers	3	8	14
Bakers and Confectioners	98	199	448

WORKSHOPS.

Total No. of visits	1114
No. of rooms	391
No. of workshops in which the space was less than 250 cubic feet per person	5
No. of rooms in which the space was less than 250 cubic feet per person	7
No. found dirty	18
No. with defective ventilation of drains	19
No. with closets out of order	3
Insufficient sanitary accommodation	13
No separate closet accommodation for the sexes	16
Gullies made up	17

BAKEHOUSES.

Total No. of visits	448
Notices served	57
Notices complied with	50
No. dirty and requiring lime washing	40
No. found with defective drainage	22
No. requiring repairs	3

MEAT AND FISH INSPECTOR'S REPORT.

YEAR ENDING THE 31ST DECEMBER, 1893.

MEAT AND FISH CONDEMNED AND DESTROYED.

40¼	Carcases of Beef.
1,146lbs.	Meat.
1	Stirk.
8	Calves.
9	Sheep.
4	Pigs.
174	Rabbits.
36	Geese.
11	Ducks.
474	Boxes of Kippers.
9	Barrels of Garnets.
11	Boxes ,,
8	Kits ,,
18	Boxes of Herrings.
29	Barrels ,,
1	Kit ,,
25	Boxes of Ray.
17	Barrels ,,
3	Kits ,,
16½	Bags of Cockles.
20	Bags of Mussels.
39	Boxes of Mackerel.
3	Boxes of Sprones.
1	Barrel of Cat Fish.
2	Boxes of Cod Fish.
1½	Barrels of Ling.
11	Boxes of Plaice.
1	Kit ,,
7	Boxes of Pullings.
92	Boxes of Finnon Haddock.
3	Kits ,, ,,
1	Box of Lobsters.
1	Box of Congereel.

No. of visits to private Slaughterhouses—2,967.

WILLIAM HARRISON,

Meat and Fish Inspector.

REPORT OF NUISANCE INSPECTOR.

Health Office,
51, Ainsworth Street,
Blackburn.

To the Medical Officer of Health.

Sir,—The following is the report of the work of my department for the year 1893.

ANALYSIS OF FOOD.

No. of Samples purchased	Name.	No Submitted for Analysis.	Genuine.	Adulterated
63	Milk ...	20	20	—
	Butter ...	23	22	1
	Lard ...	17	14	3
	Pepper ...	1	1	—
	Coffee ...	1	1	—
	Vinegar ...	1	1	—
		63	59	4

The vendors of adulterated Butter and Lard were summoned before the Magistrates. In one case a penalty of 10s. and costs was imposed, the remaining summonses were withdrawn on payment of costs on account of the adulterations being small.

Inhabited Vans.—The dwelling vans that have entered the borough have been inspected. No infectious disease was found. The sanitary condition of the vans was satisfactory, more so than in previous years.

Offensive Trades.—During the year the various offensive trades have been frequently visited, and were found in a much cleaner condition.

Canal Boats.—I have inspected and reported upon 487 registered canal boats, and four canal boats for registration. The number of boats—of which particulars of occupation have been kept—are as follows :—In 487 boats there were met with 437 men and 76 women and 32 children, of whom 26 were under school age. During my inspection I have found nine cases of infringement of the Act, viz. : One boat without certificate, five requiring repairs, and three requiring painting, but no legal proceedings have been taken, as the infringments were at once attended to. No infectious disease has been reported or detected. There were four boats registered during the year 1893, including one case of re-registration, rendered necessary on account of structural alterations and change of owners. The number of boats registered is 109.

Disinfection.—The work of disinfection has very much increased this year.

9 Schools,
409 Dwelling-houses,
348 Beds,
340 Quilts,
394 Bolsters,
507 Pillows,
121 Pairs of Mattresses,
349 Sheets,
113 Suits of Clothes,
60 Carpets,
25 Rugs,
159 Blankets, and
473 Sundry articles

have undergone disinfection.

Infected articles destroyed by owners' consent, viz :—

19 Beds,
13 Bolsters,
7 Pillows,
16 Pairs of Mattresses,
7 Sheets,
2 Blankets,
3 Quilts, and
27 Sundry articles.

Lodging Houses.—All the lodging houses have been visited each day during the year. The number of common lodging houses upon the register is 51, accommodating 1,052 adults and 93 children.

During the year

15 houses were refused registration, the premises being unfit.

17 houses were re-registered owing to change of keeper.

7 houses have had the number of lodgers varied.

Three prosecutions have been taken :

One for keeping an unregistered house,

One for breach of bye-laws, and

One for failing to report a case of infectious disease. The first case was withdrawn on payment of costs, and the other two cases were each fined 20s. and costs.

Smoke Observations.—22 smoke observations were taken. Nine exceeded the limit of seven minutes. Legal proceedings were taken in one case. An order was made to abate the nuisance and to pay costs.

Complaints.--During the year 226 complaints of various kinds have been reported and attended to, as compared with 416 in 1892. One person was fined 10/- and costs for keeping pigs, so as to be a nuisance and injurious to health.

I have superintended work carried out by the assistant inspectors. The work this year has increased, a tabulated account of which is given.

There are often several nuisances included in one notice, and a great number of nuisances are often remedied by a verbal

notice, so that the table does not include all the nuisances attended to.

Besides these, 648 visits have been made to Scarlet Fever cases in order to leave disinfectants, and 3,194 to Typhoid Fever cases, leaving and collecting excreta pans and leaving disinfectants.

No. 1 DISTRICT.

Inspector Humphrey, May.

Nnmber of visits	10809
Number of visits to Fever cases	698
Gullies cleared and opened	37
Drains opened and repaired	52
Slopstones disconnected	28
Houses, cellars, yards, and privies cleaned	26
Roofs repaired	41
Downspouts and slopstone pipes repaired	56
Water closets opened and repaired	53
Poultry and pigeons removed from dwellings	165
Ashpits repaired	47
Accumulation of filth removed	31
Horse manure middens emptied	216
Receptacles for ashes provided	67
Dwelling houses whitewashed	198
Offensive middens reported to committee	36
Number of visits to common lodging houses	5316
Daries inspected	6
Cowsheds inspected	23
Smoke observations made	4
Ashpits reported to scavenging superintendent to be emptied	317
Street gulleys reported to scavenging superintendent	50
Preliminary notices sent	392
Public health notices sent	85
Visits to common yards, back roads, and passages	1102
Smoke test applied	1
Number of visits to canal boats	21

No. 2 DISTRICT.

Inspector Thomas Haworth.

Number of visits	14559
Number of visits to fever cases	629
Gullies cleared and opened	30
Drains opened and repaired	45
Slopstones disconnected	48
Baths and lavatories disconnected	8
Soil pipes disconnected	6
Houses, cellars, yards, and privies cleaned	15
Roofs repaired	13
Downspouts and slopstone pipes repaired	57
Water closets opened and repaired	54
Poultry and pigeons removed from dwellings	52
Pigs removed from objectionable situations	2
Ashpits repaired	3
Accumulation of filth removed	8
Hore manure middens emptied	232
Receptacles for ashes provided	19
Dwelling-houses whitewashed	194
Offensive middens reported to Committee	30
Number of visits to common lodging houses	6139
Dairies inspected	38
Cow-sheds inspected	49
Ashpits reported to Scavenging Superintendent to be emptied	139
Street gullies reported to Scavenging Superintendent	27
Preliminary notices sent	274
Public health notices sent	50
Visits to common yards, back roads, and passages	2564
Smoke test applied	51

No. 3 DISTRICT.

Inspector James Graham.

Number of visits	19962
Number of visits to fever cases	520
Gullies cleared and opened	11
Drains opened and repaired	35
Slopstones disconnected	38
Soil pipes disconnected	2
Soil pipes ventilated	1
Houses, cellars, yards, and privies cleaned	34
Roofs repaired	4
Downspouts and slopstone pipes repaired	41
Water closets opened and repaired	22
Poultry and pigeons removed from dwellings	35
Pigs removed from objectionable situations	2
Ashpits repaired	5
Accumulation of filth removed	40
Horse manure middens emptied	286
Receptacles for ashes provided	17
Dwelling-houses whitewashed	43
Offensive middens reported to committee	81
Number of visits to common lodging-houses	7652
Marine and second-hand stores inspected	3
Dairies inspected	6
Cow-sheds inspected	13
River Pollutions stopped (Blakewater)	21
Smoke observations made	18
Ashpits reported to Scavenging Superintendent	64
Street gullies reported to Scavenging Superintendent	63
Preliminary Notices sent	330

Public health notices sent	55
Visits to common yards, back roads, and passages	2269
Smoke Test applied	25

I am, Sir,

Yours obediently,

A. J. SOSBE.

APPENDIX A.

Deaths Registered and causes thereof, in the County Borough of Blackburn, during the year 1895, from January 1st to December 31st, inclusive.

Population,—estimated to middle of year, 124,006.

CAUSES OF DEATH.—CLASSES.	TOTAL SEX. Males	TOTAL SEX. Females	0 to 1 M.	0 to 1 F.	1 to 5 M.	1 to 5 F.	5 to 10 M.	5 to 10 F.	10 to 15 M.	10 to 15 F.	15 to 20 M.	15 to 20 F.	20 to 25 M.	20 to 25 F.	25 to 35 M.	25 to 35 F.	35 to 45 M.	35 to 45 F.	45 to 55 M.	45 to 55 F.	55 to 60 M.	55 to 60 F.	60 to 65 M.	60 to 65 F.	65 to 75 M.	65 to 75 F.	75 and Upwards M.	75 and Upwards F.	Total under 5 Years M.	Total under 5 Years F.	TOTAL	Deaths per 1,000 living
I. Specific Febrile or Zymotic	464	404	185	160	132	102	13	19	6	8	14	11	12	12	25	30	29	18	22	14	9	8	5	11	9	10	3	1	317	262	868	6·9
II. Parasitic Diseases	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	·008
III. Dietic Diseases	13	17	9	14	2	2	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	11	16	30	·2
IV. Constitutional Diseases	36	63	3	1	1	...	1	2	...	...	1	2	...	2	...	12	4	12	6	12	6	8	3	2	10	6	1	4	4	1	99	·8
V. Developmental Diseases	133	84	81	41	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	3	...	20	14	28	29	81	41	217	1·7
VI. Local Diseases	718	696	206	165	89	93	15	14	8	4	16	11	12	12	30	28	63	62	66	67	56	50	52	46	67	116	38	28	295	258	1414	11·4
VII. Deaths from Violence	32	17	1	5	6	5	2	...	1	1	2	1	2	...	2	...	8	...	3	3	2	2	1	0	2	...	...	...	7	10	49	·3
VIII. Ill-defined and not specified causes	62	53	24	26	3	6	2	...	2	1	1	...	1	...	5	...	5	...	5	7	6	4	3	4	3	4	2	1	27	32	115	·9
TOTALS	1459	1334	510	421	233	208	33	35	17	14	34	25	27	26	62	70	110	93	103	103	80	72	67	63	111	150	72	63	743	620	2793	22·5
I.—Specific Febrile or Zymotic Diseases.																																
1.—MIASMATIC DISEASES.																																
Small Pox: Vaccinated	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	·01
Small Pox: Unvaccinated	3	3	...	1	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	1	1	...	...	...	...	...	...	...	...	1	6	·05
Small Pox: No Statement	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	77	63	22	13	51	43	4	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	73	56	140	1·1
Scarlet Fever	2	2	1	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	4	·03
Typhus	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	·008
Whooping Cough	16	14	13	7	3	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	14	30	·2
Diphtheria	1	1	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	·01
Croup	7	5	2	1	5	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	5	12	·09
Simple continued or ill-defined Fever	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	·008
Enteric or Typhoid Fever	15	12	1	1	3	2	2	2	1	1	4	1	1	...	2	1	1	2	...	...	...	2	...	...	...	...	...	...	4	3	27	·2
TUBERCULOSIS.																																
(a) General Tuberculosis	22	13	10	4	10	2	1	2	...	2	...	1	...	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	20	6	35	·2
(b) Phthisis	73	61	3	5	3	1	2	1	1	3	6	8	9	6	18	20	12	8	13	4	2	1	2	2	2	2	...	...	6	6	134	1·0
(c) Abdominal Tuberculosis	40	40	26	26	11	9	2	3	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	37	35	80	·6
(d) Tubercular Meningitis Acute Hydrocephalus	15	10	3	4	6	3	1	2	2	...	2	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	9	7	25	·2
(e) Other forms of Tuberculosis	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	·01
Influenza	27	24	1	1	...	1	...	...	...	...	2	1	1	1	2	2	6	2	5	4	3	4	1	5	5	2	1	1	1	2	51	·4
Other Miasmatic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2.—DIARRHŒAL DISEASES.																																
Cholera	3	1	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	4	·03
Diarrhœa, Dysentery	145	144	96	94	36	29	1	...	1	1	...	...	...	2	...	3	3	2	2	2	1	1	1	4	2	6	2	...	132	123	289	2·3
3.—MALARIAL DISEASES.																																
Remittent Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4.—ZOOGENOUS DISEASES.																																
Cow Pox and effects of Vaccination	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases (e.g. Hydrophobia, Glanders, and Splenic Fever)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5.—VENEREAL DISEASES.																																
Syphilis	6	...	4	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	6	·05
Gonorrhœa Stricture of Urethra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6.—SEPTIC DISEASES.																																
Erysipelas	4	6	...	2	...	...	...	...	...	...	...	...	1	...	...	...	1	1	1	3	1	...	...	...	...	...	...	...	...	2	10	·08
Pyæmia Septicæmia	4	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	1	...	1	...	...	...	...	...	1	...	5	·04
Puerperal Fever	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	·01
TOTALS	464	404	185	160	132	102	13	19	6	8	14	11	12	12	25	30	29	18	22	14	9	8	5	11	9	10	3	1	317	262	868	6·9
II.—Parasitic Diseases.																																
Thrush and other Vegetable Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Worms, Hydatids and other Animal Parasitic Diseases	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	·008
TOTALS	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	·008
III.—Dietic Diseases.																																
Want of Breast Milk	11	16	9	14	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	16	27	·2
Scurvy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chronic Alcoholism	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	3	·02
Delirium Tremens	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTALS	13	17	9	14	2	2	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	11	16	30	·2
IV.—Constitutional Diseases.																																
Rheumatic Fever, Rheumatism of the Heart	...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	·01
Rheumatism	8	9	...	...	...	...	1	2	...	...	1	1	...	...	...	3	1	...	1	3	2	...	...	...	1	...	1	...	...	...	17	·1
Gout	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rickets	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	2	·01
Cancer, Malignant Disease	23	37	...	1	...	...	...	...	...	...	...	...	...	...	...	2	2	9	5	9	4	6	3	1	9	6	...	3	...	1	60	·4
Purpura, Hæmorrhagic Diathesis	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	·01
Anæmia Chlorosis Leucocythæmia	3	4	3	...	...	...	...	...	...	...	...	...	...	1	...	2	...	1	...	...	...	...	...	...	...	...	...	...	3	...	7	·06
Glycosuria, Diabetes Mellitus	1	6	...	...	...	...	...	...	...	...	...	1	...	...	...	3	1	1	...	...	...	1	...	...	...	...	...	...	...	...	7	·06
Other Constitutional Diseases	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	2	·01
TOTALS	36	63	3	1	1	...	1	2	...	...	1	2	...	2	...	12	4	12	6	12	6	8	3	2	10	6	1	4	4	1	99	·8
V.—Developmental.																																
Premature Birth	72	39	72	39	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	72	39	111	·9
Atelectasis	6	1	6	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	1	7	·06
Congenital Malformations	3	1	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	4	·03
Old Age	52	43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	3	...	20	14	28	29	...	...	95	·8
TOTALS	133	84	81	41	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	3	...	20	14	28	29	81	41	217	1·7
Local Diseases.																																
1.—DISEASES OF NERVOUS SYSTEM.																																
Inflammation of the Brain or Membranes	52	35	22	11	21	13	4	3	...	...	...	1	...	...	1	1	1	2	1	2	1	1	...	1	...	...	1	...	43	24	87	·7
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis	58	56	1	...	...	...	...	...	...	...	...	...	...	...	1	...	3	2	5	5	9	7	12	11	18	25	9	6	1	...	114	·9
Insanity, General Paralysis of the Insane	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	1	...	...	...	...	4	·03
Epilepsy	5	3	...	...	...	...	...	...	...	...	1	...	...	...	1	...	2	1	...	1	...	...	...	1	1	...	...	...	...	...	8	·07
Convulsions	60	46	48	37	11	7	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	59	44	106	·8
Laryngismus Stridulus (Spasm of Glottis)	3	5	3	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	5	8	·07
Disease of Spinal Cord, Paraplegia Paralysis Agitans	7	14	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	3	3	...	1	6	1	1	...	1	21	·1
Other Diseases of the Nervous System	8	4	...	1	1	...	...	...	1	...	1	...	...	...	...	...	1	1	1	1	1	...	1	1	...	...	1	...	1	1	12	·07
2.—DISEASES OF ORGANS OF SPECIAL SENSE (e.g. of Ear, Eye, Nose)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3.—DISEASES OF CIRCULATORY SYSTEM.																																
Pericarditis	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	·01
Acute Endocarditis	3	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	4	·03
Valvular Diseases of Heart	12	7	...	...	...	...	...	...	1	...	1	...	...	...	2	...	2	3	1	2	1	1	4	1	...	...	...	...	...	...	19	·1
Other Diseases of Heart	46	68	1	1	...	1	...	...	2	1	...	1	2	4	3	3	6	11	9	9	9	11	4	4	7	19	3	3	1	2	114	·9
Aneurism	5	2	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	...	1	...	1	...	...	...	...	1	...	...	...	...	7	·06
Embolism Thromboses	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	·008
Other Diseases of Blood Vessels	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	·008
4.—DISEASES OF RESPIRATORY SYSTEM.																																
Laryngitis	3	4	...	...	...	1	1	1	...	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	7	·06
Emphysema Asthma	2	5	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	1	1	...	1	7	·06
Bronchitis	177	177	59	46	19	23	2	1	1	...	1	...	2	...	3	6	7	7	20	22	13	13	13	11	21	35	16	13	78	69	354	2·8
Pneumonia	160	135	37	27	27	33	5	6	1	1	7	6	3	2	11	4	24	12	18	13	9	4	8	8	7	18	3	1	64	60	295	2·3
Pleurisy	7	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	1	...	...	1	1	...	...	...	2	...	8	·07
Other Diseases of Respiratory System	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	·008
5.—DISEASES OF DIGESTIVE SYSTEM.																																
Dentition	4	8	2	5	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	8	12	·09
Sore Throat, Quinsy	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	·008
Diseases of Stomach	1	7	...	...	...	2	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	1	...	1	...	...	...	2	...	2	8	·06
Enteritis	22	29	15	14	3	9	1	1	...	...	...	1	...	...	...	2	...	...	...	1	...	...	...	...	1	1	2	...	18	23	51	·4
Obstructive Diseases of Intestine	14	10	7	5	3	...	...	...	...	...	...	...	...	...	1	...	...	1	...	3	1	...	...	1	2	...	...	...	10	5	24	·1
Peritonitis	11	12	3	2	1	...	...	...	1	...	1	1	2	1	1	1	1	4	1	...	...	1	...	1	...	1	...	...	4	2	23	·1
Ascites	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	2	·01
Cirrhosis of Liver	8	8	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	2	2	1	1	1	1	2	1	2	...	...	...	...	16	·1
Jaundice and other Diseases of Liver	...	3	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	3	·02
Other Diseases of Digestive	6	9	4	4	...	1	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	1	...	1	1	1	...	...	4	5	15	·1
6.—DISEASES OF LYMPHATIC SYSTEM (e.g. of Lymphatics and Spleen)	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	·008
7.—DISEASES OF GLAND-LIKE ORGANS OF UNCERTAIN USE (e.g. Bronchocele, Addison's Disease)	2	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	3	·02
8.—DISEASES OF URINARY SYSTEM.																																
Acute Nephritis	5	6	...	1	...	...	...	...	...	...	...	...	...	...	...	1	1	3	1	...	2	1	1	...	...	...	...	...	...	1	11	·9
Bright's Diseases, Albuminuria	15	7	...	2	...	...	...	1	...	...	1	...	1	...	1	...	3	1	3	1	1	1	2	...	3	1	...	...	...	2	22	·1
Disease of Bladder or of Prostate	5	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...	1	...	1	...	5	·04
Other Diseases of the Urinary System	6	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	...	1	1	...	...	...	1	1	...	1	1	...	10	·8
9.—DISEASES OF REPRODUCTIVE SYSTEM.																																
(a) Organs of Generation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Male Organs	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	·008
Female Organs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(b) Of Parturition	...	8	...	...	...	...	...	...	...	...	...	...	...	3	...	2	...	3	...	...	...	...	...	...	...	...	...	...	...	...	8	·07
Abortion Miscarriage	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Convulsions	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Placenta Prævia Flooding	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Accidents of Childbirth	...	9	...	...	...	...	...	...	...	...	...	...	...	1	...	4	...	4	...	...	...	...	...	...	...	...	...	...	...	...	9	·08
10.—DISEASES OF JOINTS AND BONES.																																
Caries Necrosis	2	3	...	...	...	...	...	...	1	...	...	...	...	1	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	5	·04
Arthritis, Ostitis, Periostitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Joints and Bones	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	·008
11.—DISEASES OF INTEGUMENTARY.																																
Carbuncle Cellulitis	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	1	...	...	...	...	3	·01
Other Diseases of the Integumentary System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTALS	718	696	206	165	89	93	15	14	8	4	16	11	12	12	30	28	63	62	66	67	56	50	52	46	67	116	38	28	295	258	1414	11·4
VII.—Deaths from Violence.																																
1.—ACCIDENT OR NEGLIGENCE.																																
Fractures and Contusions	11	5	...	...	1	2	...	...	...	...	1	1	2	...	...	...	4	...	2	2	...	...	1	...	...	...	...	...	1	2	16	·1
Gunshot Wounds	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	·008
Burn, Scald	8	4	...	...	5	3	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	5	3	12	·09
Poison	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	·008
Drowning	5	1	...	...	...	...	1	...	...	1	...	...	...	...	1	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	6	·05
Suffocation	1	6	1	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	5	7	·06
Otherwise	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2.—HOMICIDE.																																
Manslaughter	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murder	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	·008
3.—SUICIDE.																																
Gunshot Wounds	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	2	·01
Poison	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Drowning	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	·008
Hanging	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	2	·01
Otherwise	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4.—EXECUTION.																																
Hanging	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTALS	32	17	1	5	6	5	2	...	1	1	2	1	2	...	2	...	8	...	3	3	2	2	1	...	2	...	...	...	7	10	49	·3
VII.—Deaths from Ill-defined and not Specified Causes.																																
Dropsy	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2	·01
Debility Atrophy Inanition	3	11	3	9	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	11	14	·1
Mortification	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tumour	3	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	1	...	1	...	...	...	...	...	...	...	5	·04
Abscess	2	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	3	·02
Hæmorrhage	4	6	1	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	2	...	1	1	1	...	...	...	1	1	1	10	·08
Other Ill-defined Causes	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	·01
Causes Unspecified, Inquest	14	4	2	3	...	...	1	...	1	...	...	...	1	...	1	...	2	...	3	1	3	...	...	...	...	...	...	...	2	3	18	·1
Do. do. no Inquest	34	27	16	11	2	4	1	...	...	...	1	...	...	...	3	...	3	...	1	2	2	3	1	3	2	4	2	...	18	15	61	·5
TOTALS	62	53	24	26	3	6	2	...	2	1	1	...	1	...	5	...	5	...	5	7	6	4	3	4	3	4	2	1	27	32	115	·9
BIRTHS: Legitimate M. 1868, F. 1787; Illegitimate M. 93, F. 74; TOTALS M. 1961, F. 1861 = 3822	1459	1334	510	412	233	208	33	35	17	14	34	25	27	26	62	70	110	93	103	103	80	72	67	63	111	150	72	63	743	620	2793	22·5

APPENDIX B.

Deaths and Death Rate in Enumeration Districts, 1889 to 1893 inclusive.

District.	Population.	Deaths from								Death Rate.
		Scarlet Fever.	Typhoid.	Diarrhœa	Other Zymotic	Phthisis	Other Lungs	All Others	All Causes	
1	615	1	2	5	7	9	15	53	92	29·2
2	696	2	1	4	5	5	21	56	94	25·8
3	1009	1	1	8	13	15	53	107	198	38·6
4	901	1	3	5	6	4	43	71	133	28·7
5	635	1	1	9	7	5	36	58	117	36·2
6	1101	1	..	5	9	3	30	75	123	21·8
7	1230	1	3	13	11	16	49	108	201	32·5
8	1040	6	3	8	12	3	36	63	131	25·0
9	883	1	2	1	8	4	30	52	98	21·5
10	955	11	1	5	12	3	27	58	117	24·0
11	1113	2	1	11	18	13	67	110	222	39·5
12	1349	...	1	6	8	12	58	114	199	28·9
13	794	3	...	3	2	8	17	45	78	18·8
14	953	1	2	3	5	6	17	38	72	14·6
15	899	1	..	8	5	5	28	59	106	23·3
16	1219	1	1	14	9	3	40	97	165	27·0
17	972	2	1	14	11	7	33	79	147	29·8
18	1238	..	3	13	14	9	46	72	157	25·0
19	1398	2	3	21	10	11	50	70	167	23·6
20	944	2	3	11	5	9	39	78	147	30·7
21	1102	...	1	12	9	11	46	63	142	25·4

APPENDIX B.—Continued.

Deaths and Death Rate in Enumeration Districts, 1889 to 1893 inclusive.

District.	Population.	Deaths from								Death Rate.
		Scarlet Fever.	Typhoid.	Diarrhœa.	Other Zymotic.	Phthisis	Other Lung.	All Others	All Causes	
22	788	3	1	11	8	3	16	48	90	22·8
23	688	1	1	4	4	9	20	32	71	20·3
24	1265	2	1	8	10	3	43	82	149	23·7
25	1431	4	2	25	14	14	60	122	241	33·5
26	930	1	1	14	9	10	30	47	112	23·6
27	2010	2	3	13	11	9	52	109	199	14·9
28	1333	1	1	11	5	5	26	37	86	12·8
29	589	1	...	4	7	2	14	32	60	20·3
30	899	2	...	7	6	8	28	60	111	24·4
31	1364	1	1	3	15	8	48	86	162	23·4
32	1349	...	2	10	14	2	33	55	116	17·0
33	714	2	..	9	4	2	26	48	91	25·2
34	969	3	1	5	8	7	23	44	91	18·5
35	549	...	...	5	4	3	12	25	49	18 2
36	1164	1	1	8	8	7	34	46	105	18·0
37	1053	1	...	11	21	6	26	62	127	23·7
38	1320	2	...	5	5	6	37	74	129	19·6
39	1081	2	1	4	22	12	36	72	149	27·7
40	931	1	1	4	11	9	28	62	116	24·7
41	693	...	2	2	4	8	25	51	92	25·9
42	1082	3	1	8	14	7	39	78	150	27·7

APPENDIX B.—Continued.

Deaths and Death Rate in Enumeration Districts, 1889 to 1893 inclusive.

District.	Population.	Deaths from								Death Rate.
		Scarlet Fever	Typhoid.	Diarrhœa.	Other Zymotic.	Phthisis	Other Lungs.	All Others	All Causes	
43	1386	2	2	11	21	9	58	114	217	31·0
44	511	1	...	5	8	2	24	54	94	37·1
45	695	...	...	9	8	8	37	42	104	30·2
46	715	...	...	9	13	10	67	65	164	46·1
47	693	...	1	10	9	10	41	63	134	38·9
48	1144	1	1	11	8	8	38	80	147	25·3
49	908	1	1	6	8	8	27	51	102	22·0
50	1025	2	1	3	8	5	34	67	120	23·4
51	1152	...	1	9	13	8	42	79	152	26·0
52	1132	1	...	12	20	9	45	57	144	25·6
53	1025	2	...	4	10	5	32	46	99	19·5
54	1116	...	3	6	6	5	14	64	98	17·0
55	1217	2	1	16	20	6	41	67	153	24·6
56	1095	2	1	8	13	11	48	94	177	31·9
57	1581	1	...	8	18	10	32	60	129	16·4
58	766	2	1	3	14	8	33	71	132	33·9
59	1056	1	3	14	15	9	28	71	141	26·5
60	956	1	2	12	15	5	41	82	158	32·4
61	1500	2	1	15	15	16	39	88	176	23·3
62	805	...	...	9	5	5	20	64	103	24·8
63	946	2	1	14	18	8	45	54	142	29·5

APPENDIX B.--Continued

Deaths and Death Rate in Enumeration Districts, from 1889 to 1893 inclusive.

District.	Population.	Deaths from								Death Rate.
		Scarlet Fever.	Typhoid.	Diarrhœa.	Other Zymotic	Phthisis	Other Lungs.	All Others	All Causes	
64	794	1	...	6	6	3	17	34	67	16·3
65	724	0	1	4	4	10	27	66	112	30 3
66	1278	2	5	15	13	14	60	121	230	35·9
67	1306	...	2	5	14	12	39	82	154	23·7
68	1595	5	...	7	22	9	40	124	207	25·7
69	1302	2	...	6	10	9	25	71	123	18·4
70	1678	2	2	9	34	12	66	117	242	28 6
71	1603	6	...	8	29	7	49	95	194	24·3
72	955	1	...	7	4	2	17	47	78	15·7
73	907	...	1	9	10	1	36	69	126	27·5
74	596	2	1	2	8	6	27	56	102	33·5
75	1023	1	...	2	11	4	23	44	85	16·6
76	901	...	4	7	3	8	32	68	122	26·6
77	913	...	...	2	3	6	30	38	79	17·5
78	609	...	...	3	3	12	46	74	138	44·3
79	955	3	...	3	5	7	37	80	135	28·2
80	830	...	3	4	6	3	28	55	99	24·0
81	1222	2	...	1	4	4	15	51	77	12·2
82	1063	6	4	6	17	9	48	110	200	37·6
83	1088	...	1	3	9	10	26	64	113	20·2
84	986	2	..	1	11	7	20	54	95	19·2

APPENDIX B.—Continued.

Deaths and Death Rate in Enumeration Districts, 1889 to 1893 inclusive.

District	Population.	Deaths from								Death Rate.
		Scarlet Fever.	Typhoid.	Diarrhœa.	Other Zymotic.	Phthisis	Other Lungs.	All Others	All Causes	
85	1203	2	2	3	11	6	35	62	121	19 9
86	693	...	...	11	10	3	27	48	99	28·8
87	1019	2	1	6	6	4	22	40	81	15·7
88	1104	...	1	2	1	3	10	32	49	9·0
89	949	2	1	3	9	10	35	52	112	23·1
90	1163	1	1	7	9	4	35	62	119	20·6
91	1074	1	3	5	8	4	30	40	91	16·7
92	1432	1	2	8	13	11	67	80	182	25·1
93	1276	4	1	1	5	3	19	62	95	14·8
94	1195	1	...	4	4	4	13	30	56	9·2
95	781	2	2	6	5	4	34	44	97	24·3
96	764	1	1	...	4	2	19	43	70	18·3
97	1203	...	2	1	4	8	27	40	82	13·3
98	924	1	1	...	5	3	9	27	46	9·7
99	931	3	..	2	6	7	12	39	69	15·0
100	514	3	1	1	4	6	14	37	66	25·2
101	539	...	2	2	4	1	8	37	54	20·4
102	651	1	...	4	3	3	15	29	55	16·8
103	1233	8	4	5	7	9	33	72	138	21·8
104	1455	2	2	4	13	10	49	95	175	24·0
105	1235	..	1	8	11	6	35	92	153	24·2

APPENDIX B.—Continued.

Deaths and Death Rate in Enumeration Districts, from 1889 to 1893 inclusive.

District.	Population.	Deaths from								Death Rate.
		Scarlet Fever.	Typhoid.	Diarrhœa	Other Zymotic.	Phthisis	Other Lungs.	All Others	All Causes	
106	1101	...	...	6	7	8	24	55	100	18·1
107	1500	3	2	9	10	7	33	71	135	18·0
108	1650	3	1	10	10	7	42	99	172	20·6
109	1758	4	...	5	6	3	42	93	153	17·0
110	1237	7	1	3	3	4	27	73	118	18·5
111	1202	1	4	10	7	9	34	88	153	24·9
112	1365	2	2	1	6	10	46	53	120	17·5
113	796	...	2	1	1	2	11	31	48	11·3

The position of the districts are shown on the first map.

APPENDIX C.

BOROUGH, 1893.	Card Room Hands.	Spinners.	Spinning and Card Masters.	Weavers. M.	Weavers. F.	Winders, Warpers, Tapers, Loomers, and Drawers.	Overlookers.	Cotton Warehouse.		Paper Makers.	Factory Hands (not Paper nor Cotton.)	Engine Tenters.	Coal Miners.	Bricklayers' Labourers.	Labourers in Cotton Mills.	Labourers.	Carters, Draymen, and Cabmen.	Grooms and Horse-keepers.	Foundrymen.	Butchers.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	COTTON.																			
Zymotic Diseases																				
Under 1	7	22	...	70	...	15	9	4	...	1	5	2	5	1	1	29	15	1	15	2
1 ,, 5	3	15	1	43	...	13	5	2	...	...	4	2	5	1	1	23	13	1	14	1
5 ,, 15	1	...	...	5	...	...	...	...	...	...	...	...	...	...	...	6	5	...	1	1
15 ,, 25	1	...	...	2	3	2	...	...	...	...	...	...	...	...	...	1	1	...	1	...
25 ,, 35	...	...	...	1	2	3	1	...	...	...	...	...	...	...	...	...	1	...	...	...
35 ,, 45	2	...	...	3	3	2	...	1	...	...	...	...	...	...	...	4	...	...	1	...
45 ,, 55	...	1	...	2	...	2	...	...	...	...	...	...	...	...	...	2	2	...	...	...
55 ,, 65	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
65 and upwards	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	2	...	...	...	1
Totals	14	38	1	126	8	37	15	8	...	1	10	4	10	2	2	77	42	2	34	5
Cancer.																				
Under 1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1 ,, 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5 ,, 15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15 ,, 25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25 ,, 35	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
35 ,, 45	...	...	...	1	2	2	...	...	...	...	1	...	...	...	...	1	...	...	...	...
45 ,, 55	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	1	...
55 ,, 65	...	...	...	1	...	1	...	...	...	...	1	1	...	...	...	1	1	...	...	...
65 and upwards	...	...	...	2	...	1	...	1	...	...	...	...	...	...	1	2	...	...	...	...
Totals	...	...	...	5	3	5	1	1	...	...	2	1	...	...	1	4	1	...	1	...
Nervous Diseases other than Convulsions.																				
Under 1	...	5	...	9	...	2	...	...	...	...	2	3	...	...	...	6	2	...	4	...
1 ,, 5	...	4	1	7	...	3	1	...	...	...	1	1	...	1	...	3	2	...	4	...
5 ,, 15	...	...	...	3	...	1	...	...	...	...	2	...	...	...	...	1	1	...	1	...
15 ,, 25	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25 ,, 35	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
35 ,, 45	...	...	...	3	1	1	...	...	...	...	...	...	...	...	...	1	1	...	...	...
45 ,, 55	...	...	...	...	1	2	...	...	...	...	1	...	...	...	...	1	...	...	...	...
55 ,, 65	...	1	...	4	1	1	...	...	...	...	...	...	...	...	...	7	...	...	...	...
65 and upwards	...	2	...	6	...	3	1	1	...	...	2	...	...	...	...	9	...	1	2	...
Totals	...	12	1	35	4	13	2	1	...	...	9	4	...	1	...	28	6	1	11	...
Tubercular Diseases.																				
Under 1	...	5	...	21	...	1	1	...	...	1	4	2	1	1	...	13	7	...	4	2
1 ,, 5	...	6	...	11	...	6	2	1	...	1	4	2	...	1	...	6	2	...	3	...
5 ,, 15	...	1	...	3	...	...	2	1	...	...	1	...	...	2	...	3	...	...	...	...
15 ,, 25	...	1	...	6	10	4	...	1	...	1	3	1	...	...	...	...	1	...	1	...
25 ,, 35	...	3	...	3	2	7	...	1	...	...	...	...	...	...	...	4	...	...	4	...
35 ,, 45	2	2	...	2	4	...	...	1	...	1	...	...	1	...	...	3	1	...	...	...
45 ,, 55	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	2	...
55 ,, 65	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...
65 and upwards	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Totals	2	19	...	49	16	19	5	5	...	4	12	5	2	4	...	31	11	...	15	2
Other Respiratory Diseases.																				
Under 1	4	16	...	45	...	4	5	...	...	...	7	3	1	...	2	30	14	...	11	...
1 ,, 5	1	9	...	26	...	2	1	...	...	1	3	2	1	...	1	16	4	1	4	...
5 ,, 15	1	...	...	4	1	...	1	...	...	...	...	...	1	...	...	2	1	...	2	2
15 ,, 25	...	1	...	5	6	3	...	1	...	...	1	...	1	...	...	1	...	...	1	1
25 ,, 35	1	3	...	2	2	...	...	...	...	1	1	...	...	...	...	1	...	...	2	1
35 ,, 45	...	...	...	5	3	2	...	1	...	...	1	1	...	...	...	6	1	...	7	...
45 ,, 55	3	3	...	3	2	7	...	...	...	...	1	...	...	...	1	8	...	...	4	...
55 ,, 65	...	2	...	3	4	1	1	...	...	...	5	1	...	...	...	13	...	...	4	...
65 and upwards	1	3	...	3	2	2	1	...	...	...	2	...	...	...	2	13	2	...	6	...
Totals	11	37	...	96	20	21	9	2	...	2	21	7	4	...	6	90	22	1	41	4
Diseases of Heart and Circulatory System.																				
Under 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...
1 ,, 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
5 ,, 15	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...
15 ,, 25	1	...	...	2	1	2	...	2	...	...	...	...	...	...	...	3	...	...	...	...
25 ,, 35	...	...	...	1	2	1	...	...	...	...	...	...	...	...	...	1	...	...	2	...
35 ,, 45	...	2	...	1	3	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...
45 ,, 55	1	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	2	...
55 ,, 65	...	1	...	4	1	...	1	...	...	...	...	...	...	...	...	6	...	...	1	...
65 and upwards	...	1	...	2	1	...	...	...	...	...	...	...	...	...	...	3	2	...	1	...
Totals	2	4	...	11	8	4	1	2	...	...	...	2	...	...	...	20	3	...	6	...
Diseases of Digestive System.																				
Under 1	3	8	1	10	...	3	...	1	...	...	1	...	...	...	...	10	5	...	3	2
1 ,, 5	...	2	...	2	...	1	...	...	...	...	...	...	...	...	...	2	...	...	1	...
5 ,, 15	1	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
15 ,, 25	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	2	...	...	...
25 ,, 35	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
35 ,, 45	1	...	...	4	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
45 ,, 55	1	...	...	...	1	1	...	...	...	...	1	...	...	...	...	1	1	...	...	...
55 ,, 65	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
65 and upwards	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
Totals	7	12	1	18	5	6	1	1	...	...	2	1	...	...	...	15	9	...	4	3
Diseases of Urinary System.																				
Under 1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...
1 ,, 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
5 ,, 15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
15 ,, 25	...	...	...	1	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...
25 ,, 35	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...
35 ,, 45	...	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
45 ,, 55	1	...	1	2	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...
55 ,, 65	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	1	1	...
65 and upwards	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...
Totals	1	2	1	7	1	1	2	...	...	...	1	...	...	...	1	8	2	2	1	2
Premature Birth, Marasmus etc., Teething, Convulsions																				
Under 1	3	25	...	49	...	15	6	5	...	...	4	5	3	...	...	28	12	1	13	4
1 ,, 5	2	2	...	6	...	1	2	...	...	...	1	1	...	...	...	4	2	...	1	...
Totals	5	27	...	55	...	16	8	5	...	...	5	6	3	...	...	32	14	1	14	4
Old Age.																				
Totals	1	7	...	1	1	2	1	...	...	...	2	...	...	...	...	14	2	...	4	...
Violent Deaths.																				
Under 1	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...
1 ,, 5	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...
5 ,, 15	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	4	...	...	...	...
15 ,, 25	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...
25 ,, 35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
35 ,, 45	1	2	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...
45 ,, 55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...
55 ,, 65	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	2	1	...	1	...
65 and upwards	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	2	5	...	4	...	1	2	1	...	...	2	1	...	...	...	11	4	...	2	...
All others.																				
Under 1	2	2	...	12	...	3	...	...	...	...	2	1	2	...	...	7	6	1	...	...
1 ,, 5	...	2	...	3	...	1	...	...	...	...	1	...	...	...	...	4	...	...	...	...
5 ,, 15	...	1	...	2	2	1	...	1	...	...	...	...	...	...	...	1	...	...	3	...
15 ,, 25	...	...	...	...	5	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
25 ,, 35	...	...	...	...	5	3	...	...	...	...	...	...	...	...	...	1	1	...	...	1
35 ,, 45	...	1	...	2	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
45 ,, 55	...	1	...	...	1	2	...	1	...	...	...	...	...	...	...	3	...	...	...	...
55 ,, 65	...	...	1	4	...	...	1	...	...	...	...	...	...	...	...	5	3	...	...	...
65 and upwards	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Totals	2	8	1	23	15	10	2	3	...	...	3	1	1	...	...	22	10	1	4	1
All Causes.																				
Under 1	20	84	1	218	...	43	22	10	...	2	26	16	12	2	3	127	62	3	51	10
1 ,, 5	6	40	2	98	...	27	11	3	...	2	14	3	6	3	2	64	31	2	28	1
5 ,, 15	2	2	...	21	2	2	4	3	...	...	3	...	1	2	...	14	7	...	6	4
15 ,, 25	3	3	...	20	25	13	1	5	...	1	5	2	1	...	...	6	4	...	3	1
25 ,, 35	2	6	...	9	16	14	1	1	...	1	2	...	...	...	...	10	2	...	8	2
35 ,, 45	6	8	...	22	23	8	1	2	...	1	2	2	1	...	...	20	6	1	7	1
44 ,, 55	6	6	1	9	4	15	2	2	...	...	3	1	...	...	1	22	3	...	10	...
55 ,, 65	...	4	1	19	7	4	4	...	...	...	7	3	...	...	...	34	5	1	11	...
65 and upwards	2	18	...	14	4	9	3	3	...	...	7	...	...	...	4	46	6	1	13	2
Totals	47	171	5	430	81	135	49	30	...	7	69	32	21	7	10	353	126	8	137	21

BOROUGH, 1893.	Bakers & Confectioners.	Shopkeepers.	Tailors.	Boot and Shoe Makers.	Masons and Builders.	Carpenters and Joiners.	Plumbers and Painters.	Hotel Keepers and Publicans.	Farmers.	Gardeners.	Printers and Compositors.	Teachers.	Clerks.	Manufacturers.	Professional Men.	General Servants.	House Wives.			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Zymotic Diseases																				
Under 1	4	13	4	2	7	3	2	1	...	...	1	1	6	1	...	4	...	...	...	...
1 ,, 5	2	8	2	...	4	3	6	...	2	1	3	...	1	...	5	1	...	...	...	...
5 ,, 15	...	3	1	...	...	...	...	1	...	...	...	...	2	...	...	...	...	...	...	...
15 ,, 25	...	2	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...
25 ,, 35	...	1	...	...	...	...	1	1	...	...	...	...	2	...	...	...	5	...	...	...
35 ,, 45	...	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	4	...	...	...
45 ,, 55	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	10	...	...	...
55 ,, 65	...	2	1	...	...	2	...	2	...	...	...	...	...	...	...	1	13	...	...	...
65 and upwards	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	10	...	...	...
Totals	6	32	8	2	11	9	9	9	2	1	5	1	13	2	5	7	42	...	...	...
Cancer.																				
Under 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1 ,, 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5 ,, 15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15 ,, 25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25 ,, 35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...
35 ,, 45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...
45 ,, 55	...	1	...	...	1	2	...	...	...	...	...	...	...	...	...	...	7	...	...	...
55 ,, 65	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	5	...	...	...
65 and upwards	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	11	...	...	...
Totals	...	1	...	1	1	2	...	...	...	...	...	...	...	1	...	2	28	...	...	...
Nervous Diseases other than Convulsions.																				
Under 1	1	5	1	1	2	1	2	...	...	...	...	...	1	...	...	1	...	...	...	...
1 ,, 5	...	1	...	...	2	...	...	2	...	...	...	...	5	...	...	...	...	...	...	...
5 ,, 15	...	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15 ,, 25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25 ,, 35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
35 ,, 45	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	5	...	...	...
45 ,, 55	...	...	...	...	1	1	...	1	...	...	...	...	2	...	...	...	9	...	...	...
55 ,, 65	...	3	...	2	1	2	...	...	1	...	...	...	2	2	...	1	25	...	...	...
65 and upwards	...	5	1	1	...	...	...	1	...	...	...	...	1	1	...	...	37	...	...	...
Totals	1	15	3	4	7	5	2	4	1	...	...	...	11	3	...	2	78	...	...	...
Tubercular Diseases.																				
Under 1	1	1	...	...	1	1	2	...	...	...	...	...	3	...	1	...	...	...	...	...
1 ,, 5	...	6	...	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...
5 ,, 15	...	1	...	...	1	2	1	...	...	...	...	...	1	...	...	...	...	...	...	...
15 ,, 25	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...
25 ,, 35	...	...	1	...	...	...	...	1	...	...	...	...	1	...	...	...	6	...	...	...
35 ,, 45	...	1	1	...	3	...	...	...	...	...	...	...	1	...	...	...	4	...	...	...
45 ,, 55	...	...	...	1	...	1	1	1	1	...	...	...	1	1	...	...	5	...	...	...
55 ,, 65	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...
65 and upwards	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...
Totals	1	11	3	1	5	5	4	2	2	...	...	...	9	2	1	...	22	...	...	...
Other Respiratory Diseases.																				
Under 1	2	9	4	1	2	3	3	1	...	...	1	...	1	1	1	...	...	...	...	...
1 ,, 5	2	5	5	1	4	1	...	3	...	1	...	...	3	1	...	1	...	...	...	...
5 ,, 15	...	2	1	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
15 ,, 25	...	2	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...	...	...	...
25 ,, 35	...	1	...	...	...	...	1	...	...	...	1	...	1	...	...	...	1	...	...	...
35 ,, 45	...	...	1	...	2	3	...	3	...	...	1	...	1	...	...	1	11	...	...	...
45 ,, 55	...	1	1	3	2	...	...	2	1	...	1	...	3	...	2	1	27	...	...	...
55 ,, 65	...	2	1	1	1	3	7	2	...	...	...	...	...	...	...	1	31	...	...	...
65 and upwards	...	5	...	4	1	2	...	...	...	...	1	...	1	...	...	1	64	...	...	...
Totals	4	27	13	10	13	12	11	12	1	1	5	...	12	2	4	6	138	...	...	...
Diseases of Heart and Circulatory System.																				
Under 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1 ,, 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5 ,, 15	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15 ,, 25	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25 ,, 35	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...
35 ,, 45	...	2	...	...	1	...	...	1	...	...	...	...	...	...	...	2	7	...	...	...
45 ,, 55	...	2	...	...	2	2	1	...	1	...	...	...	...	1	...	...	10	...	...	...
55 ,, 65	...	3	...	1	1	1	...	...	...	...	...	...	...	...	...	...	11	...	...	...
65 and upwards	1	2	...	...	3	...	...	1	...	...	...	2	...	...	...	2	14	...	...	...
Totals	1	12	...	1	8	3	1	2	1	...	...	2	...	1	...	4	46	...	...	...
Diseases of Digestive System.																				
Under 1	...	1	...	...	...	...	...	...	...	...	...	...	3	...	1	...	...	...	...	...
1 ,, 5	...	2	...	...	1	3	1	...	...	...	...	...	1	...	...	...	...	...	...	...
5 ,, 15	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
15 ,, 25	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
25 ,, 35	...	2	...	...	1	...	...	2	...	...	1	...	...	...	...	...	3	...	...	...
35 ,, 45	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	4	...	...	...
45 ,, 55	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	3	...	...	...
55 ,, 65	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	12	...	...	...
65 and upwards	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	...	...	...
Totals	...	6	...	...	2	3	2	6	...	...	1	...	5	1	2	...	34	...	...	...
Diseases of Urinary System.																				
Under 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1 ,, 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5 ,, 15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15 ,, 25	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25 ,, 35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
35 ,, 45	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	3	...	...	...
45 ,, 55	...	...	...	...	1	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...
55 ,, 65	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
65 and upwards	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	2	...	...	...
Totals	...	3	...	...	2	2	1	...	...	...	...	...	1	1	...	...	5	...	...	...
Premature Birth, Marasmus etc., Teething, Convulsions																				
Under 1	5	12	1	3	6	9	4	2	2	1	...	2	5	4	6	1	...	...	...	...
1 ,, 5	...	2	...	...	2	...	1	...	...	...	...	...	...	1	1	1	...	...	...	...
Totals	5	14	1	3	8	9	5	2	2	1	...	2	5	5	7	2	...	...	...	...
Old Age.																				
Totals	...	2	1	...	1	...	1	...	1	2	2	2	...	1	1	1	43	...	...	...
Violent Deaths.																				
Under 1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1 ,, 5	...	...	...	...	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
5 ,, 15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15 ,, 25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25 ,, 35	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
35 ,, 45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
45 ,, 55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...
55 ,, 65	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
65 and upwards	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	...	1	...	...	2	1	2	1	...	...	...	...	...	...	1	...	6	...	...	...
All others.																				
Under 1	2	1	2	...	...	...	1	...	1	...	2	...	4	1	...	3	...	...	...	...
1 ,, 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5 ,, 15	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...
15 ,, 25	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
25 ,, 35	...	1	1	...	2	...	...	...	...	...	...	...	...	...	...	...	8	...	...	...
35 ,, 45	...	2	...	...	1	...	...	1	1	...	...	...	...	...	...	...	11	...	...	...
45 ,, 55	...	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	6	...	...	...
55 ,, 65	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	9	...	...	...
65 and upwards	...	1	1	1	...	...	...	...	...	...	...	...	...	1	...	1	4	...	...	...
Totals	2	8	4	3	4	1	2	1	2	...	3	...	4	2	1	4	40	...	...	...
All Causes.																				
Under 1	15	43	12	8	18	20	13	4	3	1	4	1	25	7	9	8	...	...	...	...
1 ,, 5	4	24	7	...	14	5	11	6	2	2	3	...	12	2	6	4	...	...	...	...
5 ,, 15	...	9	3	...	2	3	2	1	...	...	1	...	4	1	1	...	...	...	...	...
15 ,, 25	...	7	...	1	...	1	...	1	...	...	...	...	4	1	...	2	3	...	...	...
25 ,, 35	...	5	2	...	4	...	2	4	...	...	2	...	3	...	1	...	36	...	...	...
35 ,, 45	...	7	2	...	7	4	2	8	1	...	1	...	3	...	...	4	51	...	...	...
44 ,, 55	...	6	1	4	9	8	2	5	3	...	2	...	7	2	2	1	81	...	...	...
55 ,, 65	...	12	3	6	5	7	6	5	1	...	...	2	2	4	2	4	111	...	...	...
65 and upwards	1	19	3	6	5	4	2	2	1	2	3	1	3	4	1	5	200	...	...	...
Totals	20	132	33	25	64	52	40	36	11	5	16	4	63	21	22	28	482	...	...	...